RESEARCH CENTER

FIELD
Digital Health, Biology and Earth

Activity Report 2015

Section Dissemination

Edition: 2016-03-21

ABS Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Together with J. Cortés (LAAS/CNRS, Toulouse), and C. Robert (IBPC/CNRS, Paris), we launched and have been organizing the Winter Schools series *Algorithms in Structural Bio-informatics*. These schools are meant to train PhD students and post-docs on advanced algorithmic techniques in structural biology. The 2015 Edition, who took place at the CNRS center in Cargese, focused on *Sampling bio-molecular systems*, see http://algosb.galaxy.ibpc.fr/.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

F. Cazals was member of the following program committees:

- Symposium On Geometry Processing

8.1.3. Invited Talks

– F. Cazals gave the following invited talks:

- *Energy Landscapes: Sampling, Analysis, and Comparison*, Max-Planck Institute for Solid State Research, Stuttgart, Germany. November 2015.
- *Beyond Two-sample-tests: Localizing Data Discrepancies in High-dimensional Spaces* GUDHI workshop on topological data analysis, Porquerolles, France. October 2015.
- *Exploring and modeling energy landscapes*, University Chemical Laboratories, Cambridge University, UK. February 2015.

– D. Mazauric gave the following invited talks:

- *Mass Transportation Problems with Connectivity Constraints and Energy Landscape Comparison*, Laboratoire d'Informatique Fondamentale de Marseille. March 2015.
- *Representation of simplicial complexes*, Winter School on Algorithmic Geometry of Triangulations, Inria Sophia Antipolis - Méditerranée. January 2015.

8.1.4. Leadership within the Scientific Community

– F. Cazals:

- 2010-.... Member of the steering committee of the *GDR Bioinformatique Moleculaire*, for the *Structure and macro-molecular interactions* theme.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: F. Cazals (Inria Sophia Antipolis Méditerranée) and S. Oudot (Inria Saclay), *Foundations of Geometric Methods in Data Analysis*, Data Sciences Program, Department of Applied Mathematics, Ecole Centrale Paris. (http://www-sop.inria.fr/abs/teaching/centrale-FGMDA/centrale-FGMDA.html)

Master: F. Cazals, *Algorithmic problems in computational structural biology*, 24h, Master of Science in Computational Biology from the University of Nice Sophia Antipolis, France, see http://cbb.unice.fr.

8.2.2. Supervision

(PhD thesis, defended, November 2015) A. Lhéritier, *Nonparametric methods for learning and detecting multivariate statistical dissimilarity*, University of Nice Sophia Antipolis. Advisor: F. Cazals.

(PhD thesis, defended, May 2015) D. Agarwal, *Topics in mass spectrometry based structure determination*, University of Nice Sophia Antipolis. Advisor: F. Cazals.

(PhD thesis, ongoing) C. Roth, *Modeling the flexibility of macro-molecules: theory and applications*, University of Nice Sophia Antipolis. Advisor: F. Cazals.

(PhD thesis, ongoing) S. Marillet, *Modeling antibody - antigen complexes*, University of Nice Sophia Antipolis. The thesis is co-advised by F. Cazals and P. Boudinot (INRA Jouy-en-Josas).

(PhD thesis, ongoing) R. Tetley, *Structural alignments: beyond the rigid case*, University of Nice Sophia Antipolis.

(PhD thesis, ongoing) A. Chevalier, *Sampling biomolecular systems*, University of Nice Sophia Antipolis.

8.2.3. Juries

– F. Cazals:

- Mathilde Le Boudic-Jamin, University of Rennes 1, December 2015. Rapporteur on the PhD thesis *Similarités et divergences, globales et locales, entre structures protéiques*. Advisor: R. Andonov.
- Nathan Desdouits, University Pierre et Marie Curie / Institut Pasteur Paris, May 2015. Rapporteur on the PhD thesis *Concepts et méthodes d'analyse numérique de la dynamique des cavités au sein des protéines applications à l'élaboration de stratégies novatrices d'inhibition*. Advisors: Michael Nilges and Arnaud Blondel.
- Petr Popov, University of Grenoble, January 2015. Committee member. *New methods for the prediction of protein - protein interactions at the structural level*. Advisor: Sergei Grudinin.

8.3. Popularization

Dorian Mazauric. Dorian is a member of the group of Médiation et Animation des MAthématiques, des Sciences et Techniques Informatiques et des Communications (MASTIC), Inria Sophia Antipolis - Méditerranée. He participated to the following events:

- 12-16/10/2015: Fête de la Science at collège Yves Montand, Vinon-sur-Verdon. *Graphes et algorithmes pour tous*. Organized by Institut Esope 21.
- 13/10/2015: Conference at collège Yves Montand, Vinon-sur-Verdon (avec Frédéric Havet, COATI project-team). *Présentation du métier de chercheur*. Organized by Institut Esope 21.
- 10-11/10/2015: Village des sciences et de l'innovation au Palais des Congrès d'Antibes Juan-les-Pins. Fête de la Science 2015. *Graphes et algorithmes pour tous*.

- 17/06/2015: Stage MathC2+ à Inria Sophia Antipolis - Méditerranée. *Théorie des graphes et algorithmique*.
- 18/03/2015: Conference at lycée Henri Matisse de Vence. *La théorie des graphes et ses applications dans les réseaux*. Dans le cadre du dispositif régional "Science Culture".
- 17/12/2015: Presentation at école élémentaire Sartoux, Sophia Antipolis (classe de CM2). *La magie des graphes et du binaire, algorithmes et jeux*. This presentation is part of the cycle ASTEP (Accompagnement en Sciences et Technologies à l'École Primaire).
- 14/12/2015: Presentation at école élémentaire de Montaleigne, Saint-Laurent-du-Var (five classes). *La magie des graphes et du binaire, algorithmes et jeux*. This presentation is part of the cycle ASTEP (Accompagnement en Sciences et Technologies à l'École Primaire).

AMIB Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

Mireille Régnier

SeqBio 2015

NGS day at INRIA

8.1.1.2. Member of the organizing committees

Yann Ponty

SeqBio 2015

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committees

Mireille Régnier acted as chair of the program committee for the SeqBio 2015 workshop (Orsay, France).

8.1.2.2. Member of the conference program committees

Yann Ponty

ISMB/ECCB 2015

WABI 2015

BioVis 2015

BiCOB 2015

SeqBio 2015

Mireille Régnier

SeqBio 2015

MCCMB 2015

8.1.2.3. Reviewer

Y. Ponty acted as an external reviewer for the ACM-SIGMOD 2015 conference.

8.1.3. Journal

8.1.3.1. Member of the editorial boards

M. Régnier is an editor of PeerJ Computer Science.

8.1.3.2. Reviewer - Reviewing activities

M. Régnier and Y. Ponty reviewed manuscripts for a large selection of journals in Mathematics, Computer Science and Bioinformatics: Discrete Mathematics and Theoretical Computer Science, Theoretical Computer Science, Bioinformatics, BMC Bioinformatics, Journal of Mathematical Biology, IEEE/ACM Transactions on Computational Biology and Bioinformatics, Journal of Discrete Algorithms, Algorithms for Molecular Biology, PLOS One, Journal of Theoretical Biology, RNA, Nucleic Acids Research...

8.1.4. Invited talks

Y. Ponty:

Keynote address at the bi-annual the Canadian Discrete Applied Mathematics (CanaDAM'15) meeting held at the university of Saskatoon (Canada);

Invited talk at the *Benasque RNA* triannual meeting (Spain);

Invited talk at the Mathematical Biosciences Institute (Columbus, Ohio) during the *Geometric and Topological Modeling of Biomolecules workshop*;

Invited talk at the bi-annual *meeting of the CNRS GDR BIM* at Institut Pasteur, Paris.

M. Régnier

Invited talk at Sydney University (Australia).

8.1.5. Leadership within the scientific community

Y. Ponty is scientific animator (2014-2018) of the *Structure and interactions of macromolecules* axis of the CNRS research group in molecular bioinformatics (GdR BIM);

Y. Ponty and M. Régnier are active members of the COMATEGE and the ALEA working group http://igm.univ-mlv.fr/~josuatv/webalea/ of the CNRS research group in Mathematical Computer Science (GDR IM) https://www.gdr-im.fr/.

8.1.6. Scientific expertise

Y. Ponty is a member of the 'Comité National' (hiring/evaluation committee) of CNRS in computer science (section 6) and Maths/Physics/Computer Science interfaces with life science (CID 51); he acted as an external expert for the Emergence program of Ville de Paris

M. Régnier is a member of DIGITEO progam Committee and SDV working group in Saclay area.

8.1.7. Research administration

M. Regnier participates to the *Conseil de laboratoire* of LIX as head of the AMIB team.

Y. Ponty is an elected member of the *comité national du CNRS*, and takes part in the evaluation of CNRS research scientists and structures at a national level in Computer Science (Section 6) and Life Science interfaces (CID 51).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

We have and we will go on having trained a group of good multi-disciplinary students both at the Master and PhD level. Being part of this community as a serious training group is obviously an asset. Our project is also very much involved in two major student programs in France: the Master AMI2B at Paris-Saclay (previously BIBS (Bioinformatique et Biostatistique) at Université Paris-Sud/École Polytechnique) and the parcours d'Approfondissement en Bioinformatique at École Polytechnique. We are also involved in a student partnership with McGill University (partenariat France Quebec offering French and Canadian students co-supervised internships (short term -3 to 6 months- or long term -part of the PhD studies-).

At Ecole Polytechnique, M. Régnier is in charge of M1 and M2. Most team members are teaching in this master

Beyond the plateau de Saclay, Y. Ponty taught 12h at the M2 level for University Pierre et Marie Curie in the BIM Master program.

8.2.2. Supervision

HdR

Julie Bernauer, *Geometric and statistical methods for the analysis and prediction of structural interactions between biomolecules*, Université Paris-Sud XI, January 2015, Habilitation à diriger des recherches. https://tel.archives-ouvertes.fr/tel-01136261

PhD

Daria Iakovishina, *Detection of structural variants in tumoral genomes with a Bayesian approach*, Ecole Polytechnique, November 2015. Encadrantes: Mireille Régnier and Valentina Boeva.

PhD in progress

Mélanie Boudard, *Game theory and stochastic learning for predicting the three- dimensional structure of large RNA molecules*, Univ. Paris XI, Encadrant(els): D. Barth, J. Cohen and A. Denise.

Alice Heliou, *Identification et caractérisation d'ARN circulaires dans des séquences NGS*, Ecole Polytechnique, Encadrant(els): Mireille Régnier and Hubert Becker

Amélie Heliou, *Game theory and conformation sampling for multi-scale and multi-body macromolecule docking*, Ecole Polytechnique, Encadrant(els): Johanne Cohen

Vincent Le Gallic, *Design de structures secondaires avec contraintes de séquences : une approche globale fondée sur les langages formels*, Univ. Paris XI, Encadrant(els): Yann Ponty and Alain Denise.

Cécile Pereira, *Nouvelles approches bioinformatiques pour l'étude à grande échelle de l'évolution des activités enzymatiques*, Univ. Paris XI, Encadrant(els): Olivier Lespinet et Alain Denise.

Afaf Saaidi, *Differential analysis of RNA SHAPE probing data*, Ecole Polytechnique, Encadrants: Yann Ponty and Mireille Régnier.

Antoine Soulé, *Evolutionary study of RNA-RNA interactions in yeast* , Ecole Polytechnique, Encadrants: Jean-Marc Steyaert and J. Waldispuhl (U. McGill, Canada)

8.2.3. Juries

Yann, JMS, Philippe, MR

Hiring committees

Chargé de Recherches,INRIA, 2015, CRI Saclay Ile de France: M. Régnier

Ingénieur,INRIA, 2015, CRI Grenoble Rhone-Alpes: Mireille Régnier

Research Scientists/Directors, CNRS, Theoretical Computer Science (section 6) and Interfaces of Life Sciences (CID 51), 24 positions in 2015: Y. Ponty

PhD juries

Paul Dallaire, RNA Bioinformatics, Université de Montréal: Y. Ponty (External reviewer)

Magali Semeria, Comparative Genomics, Université Lyon I: Y. Ponty (Jury Member)

HDR juries

J. Bernauer (Paris-Sud U.) : J.-M. Steyaert

8.3. Popularization

AMIB animated the *Construisons les ARN* booth at *Fête de la Science*, October 2015, http://www.inria.fr/centre/saclay/agenda/fete-de-la-science-2015 with the participation of Y. Ponty, M. Régnier, A. Héliou, A. Héliou and A. Saaidi.

BEAGLE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- We organized the first EvoEvo workshop as a satellite meeting of the 2015 ECAL conference (http://www.evoevo.eu), July, York, UK (G. Beslon, C. Knibbe, co-organizers).
- Workshop "Molecule Trajectories in Cellular Spaces: promoting interactions between theoreticians and experimentalists" (http://traece.inria.fr), November, Lyon (H. Berry, organizer)
- Annual CNRS-INRA thematic school "EIEFB: Ecole interdisciplinaire d'echanges et de formation en biologie" (http://ecoleporquerolles.inria.fr), June, Villers-sur-Mer (H. Berry, co-organizer)

9.1.1.2. Member of the organizing committees

- Bis-annual CNRS thematic school "CompSysBio: Advanced Lecture Course on Computational Systems Biology" (http://compsysbio.inria.fr), Autrans (H. Berry, G. Beslon)
- "EvoLyon 2015: Conference Lyonnaise sur l'evolution" (http://evolyon.universite-lyon.fr), Lyon (G. Beslon)
- International Conference on Systems Biology, "LyonSysBio 2015" (http://lyonsysbio2015.sciencesconf.org/?lang=en), Lyon (G. Beslon)

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Conférence en Parallélisme, Architecture et Système "COMPASS" (http://compas15.lifl.fr/) Lille (J. Rouzaud-Cornabas)
- 13th European Conference on Artificial Life "ECAL 2015" (https://www.cs.york.ac.uk/nature/ecal2015/), York, UK (G. Beslon, C. Knibbe)
- International Conference on Data Mining (ICDM) (http://icdm2015.stonybrook.edu), Atlantic City, NJ, USA (C. Rigotti)
- RECOMB-Comparative Genomics, 2015 (https://applbio.biologie.uni-frankfurt.de/recombcg2015/), Frankfurt, Germany (E. Tannier)

9.1.2.2. Reviewer

- Euro-Par 2015, Vienna, Austria (J. Rouzaud-Cornabas)
- RECOMB-Comparative Genomics 2015 (E. Tannier)
- RECOMB-2016 (E. Tannier)

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Journal of Complex Systems, AIMS Biophysics (H. Berry)

9.1.3.2. Reviewer - Reviewing activities

In 2015, Beagle members have reviewed numerous papers for international journals, including PLoS Comput Biol, Frontiers Synaptic Neuroscience, Frontiers Computational Neuroscience, J Comput Neurosci, J Theor Biol, New J Physics, Systematic Biology, BMC Bioinformatics, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing....

9.1.4. Invited talks

- H. Berry gave invited talks at the Quantitative BioImaging 2015 conference (Paris), the NYU Adu-Dhabi Workshop on Computational Neuroscience (Abu-Dhabi) and the Neuron-Glia Interactions Workshop of the European Institute for Theoretical Neuroscience (Paris) as well as invited seminars in the following labs / groups: Center for Mathematical Medecine and Biology (Nottingham, UK), Phlam (Lille), Laboratoire de bioenergetique fondamentale et appliquee (Grenoble) and Centre de Recherche en Neurobiologie et Neurophysiologie (Marseille).
- G. Beslon has been invited to give seminars at the Basel Biozentrum (Switzerland), at the UTH Zurich systems biology doctoral program (Switzerland), at the Evolutionary Algorithms conference (Lyon), at the BioVision days (Lyon) and at the Laboratoire de Biologie Quantitative et Computationnelle (UPMC, Paris).
- H. Soula gave an invited talk to the Workshop “Molecule Trajectories in Cellular Spaces: promoting interactions between theoreticians and experimentalists” in Lyon and an invited seminar at the Laboratoire de Recherche en Informatique (LRI), Orsay.
- E. Tannier was invited to give a series of 4 lectures at Simon Fraser University, Vancouver, Canada and gave invited talks to the "Phylogenetic Networks" conference (Singapore). He was also invited to give seminars at the Biosticker seminar (Nantes), to the G-Scop lab (Grenoble) and during the interdisciplinary meeting "evolution of genomes and languages" (Lyon).

9.1.5. Scientific expertise

- ANR call “Numerique et Societe” (C. Rigotti)
- Evaluation committee for the calls for funding “Systems Biology and cancer” of the “ITMO Cancer” (H. Berry)
- Science Steering Committee of the Rhone-Alpes Complex Systems Institute (IXXI) (http://www.ixxi.fr) (H. Berry)
- Scientific board of CNRS GdR MIV (Microscopie et Imagerie du Vivant, GdR 2588, http://gdr-miv.fr) (H. Berry)

9.1.6. Research administration

- Comite National de la Recherche Scientifique, CNRS, Section 6 (G. Beslon, member)
- Comite National de la Recherche Scientifique, CNRS, Section 51 (G. Beslon, member)
- Inria Administration council (Conseil d’Administration, E. Tannier, member)
- Inria Scientific board (Conseil scientifique, H. Berry, member)
- Inria “Parity-Equality” committee (H. Berry, member)
- Inria “Symposium committee” (E. Tannier, scientific director)
- Inria Grenoble-Rhone Alpes hiring committee for “young researchers" (CR2) (H. Berry, head of the committee)
- Inria Grenoble-Rhone Alpes Comite de Developpement Technologique (CDT) (C. Knibbe, member)
- Selection committee of section 64 at INSA de Lyon (H. Soula)
- Inria hiring committee for “senior researchers" (DR2) (H. Berry, member)
- Conseil de Laboratoire LIRIS lab (UMR 5205 CNRS) (G. Beslon, C. Knibbe, members)

9.2. Teaching - Supervision - Juries

9.2.1. Supervision

In addition to the PhD students of the group, listed above, Beagle members have been co-supervising PhD students from other groups. In 2015 E. Tannier has been co-supervising the PhD of Y. Anselmetti (Isem, Montpellier, co-supervised with Severine Berard) and M. Semeria (LBBE, Lyon, co-supervised with Laurent Gueguen). E. Tannier has also supervised P. Do Nascimento Biller’s one-year doctoral internship (Universidade Estadual de Campinas, Brazil) in Beagle.

9.2.2. Juries

9.2.2.1. PhD Juries

- A. Garnier, Univ. P & M Curie, Paris, December 2015 (H. Berry, rapporteur)
- A. Grignard, Univ. P & M Curie, Paris, Octobre 2015 (G. Beslon, rapporteur)
- N. Subramaniyam, Tampere University of Technology, Finland, December 2015 (H. Berry, rapporteur)
- L. Viraphong-Caudwell, Universite Grenoble Alpes, Octobre 2015 (G. Beslon, Rapporteur)
- Z. Yekuieii, Tel Aviv University, Israel, June 2015 (H. Soula, rapporteur)

9.2.2.2. HDR Juries

P. Redou, University of Brest, France, June 2015(H. Soula, rapporteur)

9.3. Popularization

- Eric Tannier gave a series of three lectures to the “Université populaire de Lyon”, entitled “Biocritique”

BIGS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- R. Azaïs: Organization of the weekly seminar of the Probability and Statistics group at the Institut Élie Cartan de Lorraine
- P. Vallois organised a meeting "Fédération Charles Hermite", with assurance societies in Luxembourg, 2015 October

10.1.1.2. Member of the organizing committees

A. Gégout-Petit co-organised the day "Méga données pour la santé" for the Fédération Charles Hermite, Nancy, March 2015.

10.1.2. Scientific events selection

10.1.2.1. Chair of conference program committees

A. Gégout-Petit was chair of 2015 "Forum des jeunes mathématicien-ne-s", Lille November 2015.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

P. Vallois is in the editorial board of "Risk and Decision Analysis".

10.1.3.2. Reviewer - Reviewing activities

All the BIGS members are regular reviewers for journals in probability, statistics and machine learning as: Bernoulli, Scandinavian Journal of statistics, Stochastics, Journal of Statistical Planning Inference, Journal of theoretical Biology, IEEE Trans. Biomedical Eng., Theoretical Biology and Medical Modelling, LIDA, Annals of Applied Probability, Annals of Operations Research and Journal of Machine Learning Research, ICML and IJCAI conferences, ...

10.1.4. Invited talks

- P. Vallois: New York, Finance Department, April 2015
- P. Vallois: Journées de probabilités, Toulouse, May 2015
- P. Vallois: Conference in memory to Marc Yor, June 2015
- C. Lacaux: Invited as plenary speaker at *Adventure in Self-Similarity*, Cornell University, USA, June 2015
- C. Lacaux: Invited speaker at *9th International conference on Extreme Value Analysis,* Session *Max-stable processes and applications*, Ann Arbor, Michigan, USA
- C. Lacaux: Invited as pleanary speaker at *4th Stochastic Geometry Days*, Poitiers, August 2015
- R. Azaïs: *Choix optimal parmi une classe d'estimateurs non paramétriques du taux de saut d'un processus markovien déterministe par morceaux*. Rencontres de l'ANR Piece à Saint-Martin-de-Londres (May 2015)
- R. Azaïs: *Recursive kernel estimates for piecewise-deterministic Markov processes*. Rencontres de l'ANR Piece à Tours (November 2015)
- A. Muller-Gueudin: *Certainty bands for the conditional cumulative distribution function and applications*. Séminaire Statistique, Probabilités, Optimisation et Contrôle, Institut de Mathématiques de Bourgogne (June 2015)

10.1.5. Leadership within the scientific community

A. Gégout-Petit was the president of the french statistical society (SFdS) until June 2015.

10.1.6. Scientific expertise

- C. Lacaux: Elected member of the Conseil National des Universités (section 26) (2011–2015)
- R. Azaïs: Member of the Technological Development Committee (Commission de Développement Technologique (CDT) in french), Inria Nancy – Grand Est

10.1.7. Research administration

- C. Lacaux: Member of the board of SMAI-MAS group
- A. Gégout-Petit: elected member of the laboratory of mathematics "Institut Elie Cartan de Lorraine"
- P. Vallois: head of the "Fédération Charles Hermite", consortium of three laboratories from Université de Lorraine in mathematics (Institut de Elie Cartan), computer science (Loria) and automatics (CRAN)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

R. Azaïs and B. Scherrer excepted, BIGS members are teachers at "Université de Lorraine" and are teaching at least 200 hours each years. Many of them have pedagogical responsibilities.

- Licence: A. Gueudin, Statistics, 45h, L3, first year of ENSAIA, Université de Lorraine, France
- Licence: S. Ferrigno, Descriptive and inferential statistics, 60h, L2, second year of EEIGM, Université de Lorraine, France
- Licence: S. Ferrigno, Statistical modeling, 60h, L2, second year of EEIGM, Université de Lorraine, France
- Licence: S. Ferrigno, Mathematical and computational tools, 20h, L3, third year of EEIGM, Université de Lorraine, France
- Licence: S. Ferrigno, Training projects, 33.5h, L1/L2/L3, first, second and third year of EEIGM, Université de Lorraine, France
- Licence: A. Gégout-Petit, Permutation test, 20h, Université de Lorraine, France
- Licence: P. Vallois, Exercices in probability, 30h, Université de Lorraine, France
- Licence: C. Lacaux, Probability, 35h, Université de Lorraine, France
- Licence: S. Wantz-Mézières, Probability and Statistics, financial mathematics, 164h, I.U.T, Université de Lorraine, France
- Licence: S. Wantz-Mézières, Probability, 60h, first year in Telecom Nancy, Université de Lorraine, France
- Licence: J-M. Monnez, Probability and Statistics, financial mathematics, 136h, I.U.T, Université de Lorraine, France
- Licence: C. Lacaux, Probability, 35h, L3, first year of Mines Nancy, Université de Lorraine, France
- Licence: S. Tindel, Introduction to probability and statistics, 30h, 2nd year for Bioengineering majors (LVE CMI), Université de Lorraine, France
- Licence: T. Bastogne, Automatics, 70h
- Master: S. Tindel, Stochastic calculus, 60h, M2, Université de Lorraine, France
- Master: S. Tindel, Applied mathematics and probability, 60h, 1st year of Telecom Nancy engineering school, Université de Lorraine, France
- Master: C. Lacaux, Stochastic Differential Equations, 31h, M1, third year of Mines Nancy, Université de Lorraine, France
- Master: A. Gueudin, Probability and Statistics, 202 h, M1, second year of ENSEM and ENSAIA, Université de Lorraine, France

- Master: S. Ferrigno, Experimental designs, 3h, M1, fourth year of EEIGM, Université de Lorraine, France
- Master: S. Ferrigno, Data analyzing and mining, 63h, M2, third year of Ecole des Mines, Université de Lorraine, France
- Master: S.Ferrigno, Modeling and forecasting, 43h, M1, second year of Ecole des Mines, Université de Lorraine, France
- Master: S.Ferrigno, Training projects, 18h, M2/M3, second and third year of Ecole des Mines, Université de Lorraine, France
- Master: A.Gégout-Petit, Statistics, modeling, 20h, future teacher, Université de Lorraine, France
- Master: P.Vallois, Mathematical finance, 70h, Université de Lorraine, France
- Master: A.Gégout-Petit, Statistics, modeling, 150h, master in applied mathematics, Université de Lorraine, France
- Master: A.Gégout-Petit, Statistics, 20h, future engineer in informatics, Telecom Nancy, Université de Lorraine, France
- Master: C.Lacaux, Stochastic Differential Equations, 31,5h, Université de Lorraine, France
- Master: J-M.Monnez, Data analysis, statistical learning, Master 2 IMOI (Ingénierie Mathématique et Outils Informatiques), Université de Lorraine, France
- Master: J-M.Monnez, Multivariate analysis, Master 2 IFM (Ingénierie de la Finance de Marché), Université de Lorraine, France
- Master: R. Azaïs, 20h, Mines de Nancy (TD de Probabilités)
- Master: T. Bastogne 120h
- B.S: S. Tindel, Differential equations, 90h, 2nd year for various Engineering majors, Purdue University, USA
- Doctoral and research: B. Scherrer gave a course on stochastic optimal control at the Machine Learning Summer School organized by Centre International de Mathématiques et d'Informatique de Toulouse

10.2.2. Diplomae management

- J-M. Monnez: Until June 2015 : Head of the Master 2 "Ingénierie Mathématique et Outils Informatiques (Mathematical Engineering and Computer Tools)", Université de Lorraine
- A. Gégout-Petit: since June 2015 : Head of the Master 2 "Ingénierie Mathématique et Outils Informatiques (Mathematical Engineering and Computer Tools)", Université de Lorraine
- A. Gégout-Petit created and is now in charge of cursus CMI in applied mathematics for Lorraine University
- C. Lacaux is in charge of the cursus *Ingénerie Mathématique* of École Nationale Supérieure des Mines de Nancy, until 09/2015
- P. Vallois is head of the "Parcours Mathématiques Financières" of the master "Applied mathematics" of Université de Lorraine
- P. Vallois is head of the convention between "Université de Lorraine and Université Hammam Sousse" about master organization. Master ISC (Ingénierie de Systèmes Complexes)
- T. Bastogne is in charge of the spécialité Systèmes & TIC du master Ingénierie de Systèmes Complexes
- T. Bastogne created and is now in charge of professional master: CIIBLE (Cybernétique, Instrumentation, Image en Biologie et medecinE) en M2 with Medicine Faculty of Université de Lorraine
- T. Bastogne created and is now in charge research master « Biosanté Numérique » with engineering school "Telecom Nancy"

10.2.3. Supervision

- PhD : Shuxian Li, "Modélisation spatio-temporelle pour l'esca de la vigne à l'échelle de la parcelle", INRA- Université de Bordeaux , defence December, 15, 2015. Advisor : A. Gégout-Petit
- PhD in progress : Kévin Duarte, 2013, Jean-Marie Monnez and Eliane Albuisson
- PhD : Marwa HAMZA "Caractérisations des familles exponentielles naturelles cubiques : étude des lois Beta généralisées et de certaines lois de Kummer", Université de Lorraine, Université de Sfax, defense May, 15, 2015. Advisors : P. Vallois and A. Hassairi
- PhD (2014-), in progress, Lévy Batista, Grant CIFRE with Cybernano, "Identification de modèles dynamiques linéaires à effets mixtes. Applications aux dynamiques de populations cellulaires", Université de Lorraine, Advisor: T. Bastogne
- PhD, in progress, Paul Rétif, "Modélisation, simulation et analyses numériques de l'interaction nanoparticules-rayons X. Applications à la radiothérapie augmentée", Université de Lorraine, CHR Metz-Thionville, Advisor: T. Bastogne, defense expected in March 2016
- PhD, in progress, Yann Petot, "Modèle probabiliste d'aide à la décision multicritère pour les études médico-économiques", Université de Lorraine, Advisors : P. Vallois and T. Bastogne
- Master: all BIGS members regularly supervise project and internship of master IMOI students
- Engineering school: all BIGS members regularly supervise project of "Ecole des Mines ", ENSEM or EEIGM students

10.2.4. Juries

- PhD: Marthe-Aline Jutand, Université de Bordeaux, "Etudes de phénomènes de transposition didactique de la statistique dans le champ universitaire et ses environnements", December, 15, 2015, Referee : A. Gégout-Petit
- PhD: Pierre Colin, AgroParistech, Sanofi, "Méthodes bayésiennes et adaptatives pour la recherche de dose optimale : le développement clinique précoce de thérapies ciblées en oncologie", December, 2015, Referee : A. Gégout-Petit
- PhD: Julien Riposo, Université Paris 6 "Computational and Mathematical Methods for Data Analysis in Biology and Finance", September, 2015, Referee: A. Gégout-Petit
- PhD: Yingjun DENG , Université Technologique de Troyes "Degradation modeling based on a time-dependent Ornstein-Uhlenbeck Process and Prognosis of system failures", February, 2015, Referee : A. Gégout-Petit
- PhD: Jérémy Rohmer, Université de Lorraine, "Importance ranking of parameter uncertainties in geo-hazard assessments ", November, 15, 2015, President: A. Gégout-Petit
- B. Scherrer was a reviewer [0] for the Phd committee of Romain Hollanders (Université Louvain La Neuve)
- HdR: Nicolas Champagnat Université de Lorraine, February, 15, 2015, President: P. Vallois
- PhD: Aurélie Beal, "Description et sélection de données en grandes dimensions", Université Aix-Marseille, February 2015. Referee: T. Bastogne

10.2.5. Selection Juries

Anne Gégout-Petit was member of four selection committies: CR2 Inria Bordeaux, PR Statistics Université Paris 6, MCF Statistics Toulouse, MCF Psychology and Statistics Grenoble.

[0] "Habilitation à diriger les recherches" is not required for reviewing a Phd in Belgium.

10.3. Popularization

- A. Gégout-Petit: manager of the project "ZOOM des métiers des mathématiques et de l'informatique" brochure and videos about 22 professionals in mathematics and computer science in order to promote these two domains with young people. http://metiers-mathsinfo.fr/
- S. Ferrigno: Advisor of a group of students, "La main à la Pâte" project, elementary schools, Nancy, January-June 2015
- S. Ferrigno: Advisor of a group of students, "La main à la Pâte" project, Institut médico-éducatif (IME), Commercy, September-December 2015
- R. Azaïs: Animation of a workshop "MATh.en.JEANS", Collège George Chepfer, Villers-lès-Nancy
- P. Vallois: popularizing talk at MJC de Toul

BONSAI Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- workshop *3rd generation sequencing*, June 9, 117 attendees
- workshop *Bioinformatics tools for NRPS discovery, from genomic data to the products*, october 28-30, 32 attendees
- workshop *Drug design and virtual screening* November 30, 60 attendees

10.1.2. Scientific events selection

10.1.2.1. Chair of conference program committees

- H. Touzet was PC chair of the international conference WABI 2015 (Atlanta, USA, september 10-12)

10.1.2.2. Member of the conference program committees

- HiCOMB 2015 (M. Giraud)
- JOBIM 2015 (H. Touzet).
- RECOMB-seq 2015 (H. Touzet, L. Noé).
- SeqBio 2015 (H. Touzet).
- WABI 2015 (H. Touzet, L. Noé, R. Chikhi).

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing activities

- Bioinformatics (M. Pupin, L. Noé, R. Chikhi)
- BMC Bioinformatics (M. Salson, R. Chikhi)
- Genome Biology (R. Chikhi)
- GigaScience (R. Chikhi)
- Microbiology Open (V. Leclère)
- Nucleic Acids Journal (R. Chikhi)
- Synthetic and Systems Biotechnology (M. Pupin)

10.1.4. Scientific expertise

- Expert for Allistène (H. Touzet)
- Expert for the French-Brazilian program CAPES-COFECUB (H. Touzet)
- Expert for Département de l'Essone (H. Touzet)

10.1.5. Research administration

- Member of the CUB for Inria Lille (S. Blanquart)
- Member of the Charles Viollette Institute Laboratory council (V. Leclère)
- Member of the Charles Viollette Institute scientific committee (V. Leclère)
- Member of the scientific operational committee of Xperium, Univ. Lille 1 (V. Leclère)

- Member of the Inria local committee for technology development (M. Pupin)
- Member of the national evaluation committee of computer science for University members (M. Pupin)
- Member of the executive council of the IFB, Institut Français de Bioinformatique, (M. Pupin)
- Member of the Inria local committee for the IT users (M. Salson)
- Member of the national scientific committee of INS2I–CNRS (H. Touzet)
- Member of the Gilles Kahn PhD award national commitee (H. Touzet)
- Member of the CRIStAL Laboratory council (H. Touzet)
- Member of the GRIOTE (Groupement de Recherche en Intégration de données Omics à Très grande Echelle, région Pays de Loire) scientific council (H. Touzet)
- Member of the scientific committee of the national program Environmics (H. Touzet)
- Member of the CRIStAL scientific council, representant of the thematic group "Modeling for life sciences" (J.-S. Varré)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching administration

- Head of the GIS department (Software Engineering and Statistics) of Polytech'Lille (S. Janot)
- Member of UFR Biologie council (V. Leclère)
- Head of the master "Innovations en biotechnologies végétales, enzymatiques et microbiennes", univ. Lille 1 (V. Leclère)
- Member of UFR IEEA council (M. Pupin, J.-S. Varré)
- Head of the 3rd year of licence of computer science, univ. Lille 1(J.-S. Varré)
- Head of the licence semester "Computer Science – S3 Harmonisation (S3H)", univ. Lille 1 (L. Noé)

10.2.2. Teaching

Licence: S. Blanquart, R. Chikhi, M. Giraud *Bioinformatics*, 40h, L3 Computer Science, Univ. Lille 1

Master: S. Blanquart, *Algorithms and applications in bioinformatics*, 24h, M1 Computer Science, Univ. Lille 1

Master: Y. Dufresne, *Algorithmics and complexity*, 36h, M1 Computer Science, Univ. Lille 1

Master: M. Giraud, *Algorithms for RNA Analysis*, 12h, M2 Bioinformatique et Modélisation, Univ. Paris 6

Licence: S. Janot, *Introduction to programming (C)*, 50h, L3 Polytech'Lille, Univ. Lille 1

License: S. Janot, *Databases*, 30h, L3 Polytech'Lille, Univ. Lille 1

Master: S. Janot, *Databases*, 12h, M1 Polytech'Lille, Univ. Lille 1

Master: S. Janot, *Logic and Semantic Web*, 80h, M1 Polytech'Lille, Univ. Lille 1

Master: V. Leclère, *Bioinformatics*, 30h, M2 Transformation Valorisation Industrielles des Agro-ressources, Univ. Lille 1

Master: V. Leclère, *Secondary metabolites*, 20h, M1 Biology, Univ. Lille 1

Master: V. Leclère, *Biotechnology*, 20h, M1Biology, Univ. Lille 1

Master: V. Leclère, *Microbiology*, 20h, M1 Biology, Univ. Lille 1

Master: L. Noé, *Bioinformatics*, 40h, M1 Biotechnologies, Univ. Lille 1

License: L. Noé, *Networks*, 42h, L3 Computer science, Univ. Lille 1

License:L. Noé, *Programming (Python)*, 54h, L3 Computer science' S3H, Univ. Lille 1

License:L. Noé, *Coding and information theory*, 36h, L2 Computer science, Univ. Lille 1

License:P. Pericard, *Data structures*, 18h, L3 Polytech'Lille, Univ. Lille 1

License:P. Pericard, *Introduction to programming (C)*, 34h, L3 Polytech'Lille, Univ. Lille 1

License:M. Pupin *Introduction to programming (Python)*, 36h, L1 Computer science, Univ. Lille 1

License:M. Pupin, *Databases*, 36h, L3 Computer science, Univ. Lille 1

License:M. Pupin, *Professional project*, 18h, L3 Computer science, Univ. Lille 1

Master: M. Pupin, *Introduction to programming (JAVA)*, 24h, M1 Mathématiques et finance, Univ. Lille 1

Master: M. Pupin, M. Salson *Bioinformatics*, 40h, M1 Biology and Biotechnologies, Univ. Lille 1

License:T. Rocher, *Algorithmics and programming*, 28h, L3 Polytech'Lille, Univ. Lille 1

License:T. Rocher, *Algorithmics and programming (remedial course)*, 14h, L3 Polytech'Lille, Univ. Lille 1

License:T. Rocher, *Databases*, 24h, L3 Polytech'Lille, Univ. Lille 1

License: M. Salson, *Automata and language theories*, 36h, L3 Computer science, Univ. Lille 1

License: M. Salson, *Skeptical thinking*, 30h, L3 Computer science, Univ. Lille 1

License: M. Salson, *Coding and information theory*, 63h, L2 Computer science, Univ. Lille 1

Master: M. Salson, *Skeptical thinking*, 14h, M2 Journalist and Scientist, ESJ, Univ. Lille 1

Master: M. Salson, *Algorithms for life sciences*, 18h, M2 Complex models, algorithms and data, Univ. Lille 1

License: J.-S. Varré, *Web programming*, 36h, L2 (licence "Computer Science", Univ. Lille 1

License: J.-S. Varré, *Programming with Python*, 36h, L2 (licence "Sciences for Engineers", Univ. Lille 1

License: J.-S. Varré, *Algorithms and Data structures*, 50h, L2 (licence "Computer science", Univ. Lille 1

License: J.-S. Varré, *System*, 36h, L3 Computer science", Univ. Lille 1

10.2.3. Supervision

PhD in progress: Y. Dufresne, Modèles et algorithmes pour la gestion de la biodiversité des peptides non-ribosomiques et la mise en évidence de nouveaux peptides bioactifs, 2013/10/01, M. Pupin, L. Noé

PhD in progress: P. Pericard, Methods for taxonomic assignation in metagenomics, 2013/11/01, H. Touzet, S. Blanquart.

PhD in progress: T. Rocher, Indexing VDJ recombinations in lymphocytes for leukemia follow-up, 2014/11/01, J.-S. Varré, M. Giraud, M. Salson

PhD in progress: C. Saad, Caractérisation des erreurs de séquençage non aléatoires, application aux mosaïques et tumeurs hétérogènes, 2014/10/01, M.-P. Buisine, H. Touzet, J. Leclerc, L. Noé, M. Figeac

PhD in progress: L. Siegwald, Bionformatic analysis of Ion Torrent metagenomic data, 2014/01/03, H. Touzet, Y. Lemoine (Institut Pasteur de Lille)

PhD in progress: C. Vroland, Indexing data for microRNA and microRNA target site identification in genomes, 2012/10/01, H. Touzet, V. Castric (EEP), M. Salson

10.2.4. Juries

- Member of the thesis committee of Souhir Sabri (CIRAD, Montpellier, V. Leclère)
- Member of the PhD thesis jury of Laetitia Bourgeade (LABRI, Bordeaux, H. Touzet)
- Member of the thesis committee of Florian Plaza Onate (Ecole Centrale, Paris, R. Chikhi)

- Member of the thesis committee of Jérome Audoux (INSERM, Montpellier, R. Chikhi, M. Salson)
- Member of the HDR jury of Fabien Jourdan (INRA, Toulouse, H. Touzet)
- Member of the hiring committee Professor of Université de Nantes (H. Touzet)
- Member of the hiring committee Professor of Université d'Evry (H. Touzet)
- Member of the hiring committee McF of Université Lille 1 (H. Touzet)
- Member of the hiring committee Professor of University of Montréal (H. Touzet)
- Member of the hiring committee ATER of Université Lille 1 (L. Noé, J.S. Varré)

10.3. Popularization

- We made seven presentations, using dedicated "genome puzzles" in high schools during the "Science week" to popularize bioinformatics.
- During a whole day in June we made presentations on bioinformatics with our "genome puzzles" to several groups of high school students.
- V. Leclère has created a demonstration stand for Xperium, part of the Learning center Innovation of Lille 1 University.

CAPSID Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

Marie-Dominique Devignes is a member of the Steering Committee for the European Conference on Computational Biology (ECCB).

David Ritchie is a member of the Bureau of the GGMM (Groupe de Graphisme et Modélisation Moléculaire).

Marie-Dominique Devignes is organising a workshop ("Atelier Santé") for the Fédération Charles Hermite.

9.1.1.2. Member of Organizing Committees

Marie-Dominique Devignes co-organised a workshop on Structural Modeling of Type IV Secretion Systems.

9.1.2. Scientific Events Selection

9.1.2.1. Member of Conference Program Committees

Marie-Dominique Devignes was a member of the programme committee for KDIR-2015, NETTAB-2015, and MIVBM-2015.

9.1.2.2. Reviewer

David Ritchie was a reviewer for IJCAI-2015.

9.1.3. Journal

9.1.3.1. Member of Editorial Boards

David Ritchie is a member of the editorial board of Scientific Reports.

9.1.3.2. Reviewing Activities

The members of the team have reviewed manuscripts for Algorithms, AIMS Biophysics, Bioinformatics, Current Opinion in Structural Biology, Journal of Biomedical Semantics, Journal of Chemical Information and Modeling, Journal of Molecular Modeling, Molecules, and Proteins.

9.1.4. Invited Talks

David Ritchie gave a presentation to the *Plateau de Modélisation Moléculaire Multi-échelle* (University of Reims).
Seyed Alborzi presented the EC-DomainMiner approach at *JOBIM-2015* (Clermont-Ferrand, France).
Bernard Maigret gave presentations for the *11th International Symposium on Bioinformatics Applied to Health* (State University of Maringá, Brasil) and the *Workshop Franco-Brasileiro de programa Ciência sem Fronteira* (EMPBRAPA, Brasil).
Marie-Dominique Devignes gave a presentation to the *Institute for Structural and Molecular Biology* at Birkbeck College (London, UK).

9.1.5. Scientific Expertise

David Ritchie has reviewed grant proposals for the French ANR and the British BBSRC.

9.1.6. Research Administration

Marie-Dominique Devignes is Chargée de Mission for the CyberBioSanté research axis at the LORIA.

David Ritchie is a member of the Commission de Mention Informatique (CMI) of the IAEM doctoral school of the University of Lorraine.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Marie-Dominique Devignes, *Relational Database Design and SQL*, 30 hours, L1, Univ. Lorraine.

Master: Marie-Dominique Devignes, *Biological Data Mining and Classification*, 12 hours, L3, Univ. Lorraine.

Doctorat: Bernard Maigret, *Virtual Screening*, 10-17 June, EMBRAPA, Brasil.

9.2.2. Supervision

PhD in progress: Gabin Personeni, *Exploration of linked open data in view of knowledge discovery. Application to the biomedical domain,* 01/10/2014, Marie-Dominique Devignes, Adrien Coulet.

PhD in progress: Seyed Ziaeddin Alborzi, *Large-scale exploration of 3D protein domain family binding sites,* 01/10/2014, David Ritchie, Marie-Dominique Devignes.

PhD in progress: Benoît Henry, *Probability theory applied to evolutionary biology,* 01/10/2013, Nicolas Champagnat, David Ritchie.

9.2.3. Juries

HdR: Julie Bernauer, *Méthodes géometriques et statistiques pour l'analyse et la prédiction des interactions structurales de biomolécules,* Université Paris Sud 11, 13/01/2015.

PhD: Romain Vasseur, *Développements HPC pour une nouvelle méthode de docking inverse : Application aux protéines matricielles,* Université de Reims – Champagne Ardennes, 29/01/2015, Pr Manuel Dauchez, Dr Stéphanie Baud, Dr Luiz-Angelo Steffenel.

PhD: Clovis Galiez, *Fragments structuraux : comparaison, prédictibilité à partir de la séquence et application à l'identification de protéines de virus,* Université de Rennes 1, 08/12/2015, Dr François Coste, Dr Jacques Nicolas.

PhD: Alicia Zhukov, *Knowledge-based generalization for metabolic models,* Université de Bordeaux, 18/12/2014, Dr David Sherman.

9.3. Popularization

An article on our KBDOCK software has been accepted for publication in ERCIM News (edition 104, January 2016) [18].

DYLISS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Member of the conference program committees

- CMSB (2015): Computational Methods on Systems Biology [A. Siegel]
- BBCC (2015): Bioinformatica e Biologia Computazionale in Campania [O. Dameron]
- SIIM (2015): Symposium sur l'Ingénierie des Informations Médicales [O. Dameron]

9.1.2. Journal

9.1.2.1. Member of the editorial boards

- Academic editor: Plos One [J. Bourdon]

9.1.2.2. Reviewer - Reviewing activities

- Journal of Mathematical Biology. Theorie des Sciences Informatiques. [A. Siegel]
- Theoretical Computer Science, Fundamenta Informaticae. [F. Coste]
- 2014 O. Dameron: Bioinformatics, Cancer informatics, Journal of Biomedical Informatics, Journal of Biomedical Semantics.
- 2015 O. Dameron: Journal of Biomedical Semantics (x3).

9.1.3. Invited talks

- A. Antoine-Lorquin *Orthocis : Une base de données pour l'étude des facteurs de transcriptions. Identification in silico de gènes ciblés par un facteur de transcription donné*. UMR MIA. AgroParis-Tech (Sep. 2015)
- M. Chevallier *Systems biology : uses of the Mobyle and Galaxy plateforms*. Bio-informatics day. e-Biogenouest and GRIOTE. (Avr. 2015).
- F. Coste *Learning efficiently (local) substitutable context-free languages from text*. XRCE seminar, Grenoble. (Jul. 2015)
- F. Coste *Learning protein languages*. Machine learning thematic trimester. CIMI, Toulouse. (Dec. 2015)
- O. Dameron *Knowledge-based selection of candidate metabolic networks*. CRC (équipe A Burgun). (Feb. 2015)
- C. Galiez *Sequence-structure relationship in protein sequences and applications to sequence annotation.* LBCQ (équipe A. Carbone), Paris. (Juil. 2015)
- C. Galiez *Apprentissage de prédictions structurales depuis la séquence pour l'annotation fonctionnelle.* LIRMM (équipe O. Gascuel), Montpellier. (Oct. 2015)
- C. Galiez *Structural fragments : comparison, predictability from sequence and application to identification of viral proteins.* MPI (équipe J. Söding), par Internet, Göttingen. (Dec. 2015)
- Y. Guitton *Metabolic profiling and control hypothesis through kinetic accumulation or elimination of secondary metabolites associated with phycotoxins of filter-feeding bivalves* RFMF 2015 (9. édition des Journées Scientifiques du Réseau Francophone de Métabolomique et Fluxomique). Lille. June 2015.

- Y. Guitton *L'annotation automatisée des analyses métabolomiques en LC-MS : un challenge relevé par la plate-forme Corsaire*. Gen2Bio. Mars 2015.
- J. Laniau *Combinatorial optimization methods to complete and analyse a metabolic network*. Journée BIOSS. Nantes. Septembre 2015
- J. Laniau *Combinatorial optimization methods to complete and analyse a metabolic network*. Journée MOABI. Paris. Novembre 2015.
- V. Picard *Asymptotic Analysis of Gillespie Algorithm under Steady-State Assumption*. Advanced Lecture Course on Computational Systems Biology. Aussois (Apr. 2015)
- V. Picard *Analyse stationnaire des réseaux de réactions : systèmes de contraintes en modélisation stochastique*. Paris. Journées du groupe de travail bioss (Nov. 2015).
- A. Siegel *Numeration, redundancy graphs and topological properties of fractals*. Department of Mathematics. Université Paris Sud (Jan. 2015)
- A. Siegel *Topological properties of generalized Rauzy fractals: which novel issues?*. FAN numeration meeting. Admont, Austria. (Jun. 2015).
- A. Siegel *Decidability problems for self-induced systems generated by a substitution?*. Conference MCU'2015. North Cyprus. (Sept. 2015).
- A. Siegel *Confronting knowledge networks on signaling networks with phosphoproteomics datasets using combinatorial optimization approaches*. Departement of computer sciences. Frei Berlin University. (Oct. 2015).
- A. Siegel *Data science and systems biology*. Data science meeting. IRISA, Rennes (Nov. 2015).

9.1.4. Leadership within the scientific community

- Member of the steering committee of the International Conference on Grammatical Inference [F. Coste].
- The team was involved in the foundation of a national working group on the symbolic study of dynamical systems named bioss [web access]. The group gathers more 100 scientists, from computer science to biology. Three meetings were organized this year. The group is supported by two French National Research Networks: bioinformatics (GDR BIM : bioinformatique moléculaire) and informatics-mathematics (GDR IM : Informatique Mathématique). [A. Siegel]

9.1.5. Scientific expertise

- Scientific Advisory Board of GDR BIM " Molecular Bioinformatics"[J. Nicolas].
- Inria National evaluation board [A. Siegel]
- Member (nominated) CNU section 65 [O. Dameron]
- Member of the Operational Legal and Ethical Risk Assessment Committee (COERLE) at Inria [J. Nicolas].
- Recruitment committees: Professor (CRISTAL, Lille) [A. Siegel], Professor (IRHS, Angers) [A. Siegel], Inria junior researcher (Nice) [A. Siegel].
- Member of the IRISA laboratory council [F. Coste].
- Member of the Inria Rennes center council [A. Siegel].
- Scientific Advisory Board of Biogenouest [J. Bourdon, A. Siegel].
- Member of SCAS (Service Commun d'Action Sociale) of Univ. Rennes 1 [C. Belleannée].
- Member of CUMIR (Commission des Utilisateurs des Moyens Informatiques, Inria Rennes) [F. Coste].

9.2. Teaching - Supervision - Juries

9.2.1. Course and track responsibilities

F. Coste is coordinator of the track "From Data to Knowledge: Machine Learning, Modeling and Indexing Multimedia Contents and Symbolic Data" of the Master by research in Computer Science (2nd year), University of Rennes 1, France.

F. Coste is coordinator of the course “Extracting knowledge from symbolic data sequences” of the Master by research in Computer Science (2nd year), University of Rennes 1, France.

O. Dameron shares the coordination of the "Bioinformatique et génomique" Master degree, Univ. Rennes1, and of the "Méthodes et traitements de l'information biomédicale et hospitalière"

O. Dameron shares the coordination of the course "Bioinformatique expérimentale", Master1 in computer science, Univ. Rennes1 + ENS. He is the coordinator of the courses "Bases de mathématiques et probablité" and "Méthodes en informatique" in Master1 in public health (Univ. Rennes 1), "Représentation des connaissances biomédicales" in Master2 in public health (Univ. Rennes 1), "Principes de programmation et d'algorithmique" and "Gestion de projets informatiques" in Master1 in bioinformatics (Univ. Rennes 1), "Standardisation des connaissances et bio-ontologies" in Master2 in bioinformatics (Univ. Rennes1), as well as of the course "e-Santé et réseaux hospitaliers" in the last year if engineering school ESIR (Univ. Rennes 1).

9.2.2. Teaching

Licence: C. Belleannée, Langages formels, 22h, L3 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, bureautique et C2i, 40h, L1 informatique, Univ. Rennes1, France.

Licence: C. Belleannée, Algorithmique et Programmation Fonctionnelle, L1 informatique, Univ. Rennes1, France.

Licence: V. Delannée, Optique, 4h, PACES, Univ. Rennes 1, France.

Licence: V. Delannée, Biostatistiques, 24h, PACES, Univ. Rennes 1, France.

Licence: J. Coquet, Algorithmique et Programmation Fonctionnelle, 20h, L1 informatique, Rennes1, France.

Licence: J. Coquet, Bureautique, 10h, L1 informatique, Rennes1, France.

Licence: O. Dameron, Biostatistiques, 12h, PACES, Univ. Rennes 1, France.

Licence: V. Picard, Probability theory, 24h, L3, ENS Rennes, France.

Master: J. Coquet, Principes de programmation et d'algorithmique, 32h, M1 BioInformatique et génomique, Rennes1, France.

Master: A. Antoine-Lorquin, Principes de programmation et d'algorithmique, 32h, M1 BioInformatique et génomique, Univ. Rennes 1, France.

Master: A. Antoine-Lorquin, Bases de mathématiques, probabilités et statistiques, 32h, M1 Master STS - Mention Santé publique, Univ. Rennes 1, France.

Master: C. Belleannée, algorithmique du texte et bioinformatique, M1 informatique, Univ. Rennes1, France

Master: C. Belleannée, Préférences Logique et contraintes, 32h, M1 informatique,Univ. Rennes1, France

Master: F. Coste, Apprentissage Supervisé, 10h, M2 Informatique, Univ. Rennes 1, France

Master: F. Coste, Données Séquentielles Symboliques, 10h, M2 Informatique, Univ. Rennes 1, France

Master: O. Dameron, Bioinformatique expérimentale, 10h, M1 informatique, Univ. Rennes 1 and ENS Rennes, France

Master: O. Dameron, Gestion de projets informatiques, 23h, M1 bioinformatique et génomique, Univ. Rennes 1, France.

Master: O. Dameron, Standardisation des connaissances et bio-ontologies, 22h, M2 bioinformatique et génomique, Univ. Rennes 1, France.

Master: C. Galiez, Compilation, 48h, M1 informatique, Rennes1 France

Master: V. Picard, Formal methods for safe development, 16h, M1, Univ. Rennes 1, France

Master: V. Picard, Agrégation de mathématiques option D, 16h, M1, ENS Rennes/Univ. Rennes 1, France.

Master: A. Siegel, Integrative and Systems biology, 20h, M2, Univ. Rennes 1, France

Engineer: O. Dameron, e-Santé et réseaux hospitaliers, ESIR, Rennes.

Engineer: O. Dameron, Bio-ontologies et Web Sémantique, ENSTBr, Brest.

9.2.3. Supervision

PhD : Clovis Galiez, *Structural fragments : comparison, predictability from sequence and application to identification of viral proteins*, 8 Dec. 2015, supervised by F. Coste and J. Nicolas. [11]

PhD: Vincent Picard, *Analyse dynamique d'algorithmes et dynamique symbolique pour l'étude de modèles semi-quantitatifs en biologie des systèmes*,16 Dec. 2015, supervised by A. Siegel and J. Bourdon. [12]

PhD in progress : Aymeric Antoine-Lorquin, *Modèles grammaticaux au service de l'identification de marqueurs de régulation génétique dans les séquences biologiques*, started in Oct. 2013, supervised by C. Belleannée

PhD in progress : Jean Coquet, *Semantic-based reasoning for biological pathways analysis*, started in Oct. 2014, supervised by O. Dameron, N. Théret and J. Nicolas.

PhD in progress : Victorien Delannée, *Optimisation à différentes échelles pour étudier la variabilité de la toxicité de contaminants alimentaires*, started in Oct. 2014, supervised by A. Siegel and N. Théret.

PhD in progress : Julie Laniau, *Méthodes d'optimisation combinatoire pour reconstruire et analyser les systèmes métaboliques de microalgues*, started in Oct. 2013, supervised by A. Siegel and D. Eveillard.

PhD in progress : Clémence Frioux, *Using preferences in Answer Set Programming to decipher interactions within the species of an ecosystem at the genomic scale*, started in Oct. 2015, supervised by A. Siegel.

9.2.4. Juries

- *Member of Ph-D thesis jury*. T. Nguyen, LABRI, Bordeaux [A. Siegel, rapporteure]. N. Mobillia, IMAG, Grenoble [A. Siegel, présidente].
- *Member of medical thesis jury*. V. Margot, Rennes [O. Dameron, examinateur].

9.2.5. Internships

- Internship, from February until July 2015. Supervised by A. Siegel. Student: Clémence Frioux. Subject: Iterative reconstruction of functional metabolic networks for non-model organisms
- Internship, from April until July 2015. Supervised by O. Dameron and J. Coquet. Student: Pierre Vignet. Subject: Evaluation of a knowledge-based selection strategy for candidate metabolic pathways
- Internship, from January until July 2015. Supervised by F. Coste. Student: Maud Jusot. Subject: Syntactic modelling of viral genomes
- Internship, from April until July 2015. Supervised by A. Siegel. Student: Meziane Aite. Subject: Tools for the reconstruction of the metabolic network of T. Lutea
- Internship, from April until July 2015. Supervised by J. Nicolas. Student: Lucas Bourneuf. Subject: Model reduction with power graph algorithms
- Internship, from April until Aug 2015. Supervised by C. Belleannée. Student: David Picard-Druet. Subject: Coupling pattern discovery and pattern matching to design a composite signature for the Yeast polyadenylation site

9.3. Popularization

- *Organization of Sciences en Cour[t]s*. Popularization Festival where PhD students explain their thesis via short films. [*J. Coquet, V. Delannée, A. Antoine-Lorquin, C. Bettembourg*] [more info].
- *Production of Sciences en Cour[t]s film*. "Une rencontre percutante": A short movie about metabolic reconstruction.[*J. Coquet, V. Delannée, A. Antoine-Lorquin*] [more info].
- *Bioinfo-fr.net* Bioinfo-fr.net is a french web site where researchers, engineers and students talks about bioinformatics. We have written 6 articles for this web site on diverse subjects: metabolic networks, genome assembly, phylogenetics, network visualization, file versionning with GIT. [*G. Collet, O. Dameron*]. [more info].
- *Animation of Bioinformatics Atelier at Data Science Symposium (IRISA's 40th anniversary)* "De la bioinformatique aux tiques". [*F. Coste*]
- *Participation to the Data Science Symposium (IRISA's 40th anniversary)* "Science data ecosystem". [*A. Siegel, O. Dameron*]

ERABLE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Pierluigi Crescenzi was co-chair of the 16th Italian Conference on Theoretical Computer Science, 9-11 September 2015, Florence, Italy.
- Alberto Marchetti-Spaccamela is member of the Steering committee of WG, Workshop on Graph Theoretic Concepts in Computer Science, and of ATMOS, Workshop on Algorithmic Approaches for Transportation Modeling, Optimization, and Systems. He was Chair of the 12th Workshop on Models and Algorithms for Planning and Scheduling Problems (MAPSP), 8-12 June 2015, La Roche-en-Ardenne, Belgium.
- Marie-France Sagot is since 2010 member and since 2014 Chair of the Steering Committee of the International Conference *LATIN* (http://www.latintcs.org/). She is member of the Steering Committee of the *European Conference on Computational Biology* (*ECCB*) since 2002 and of the International Symposium on Bioinformatics Research and Applications (ISBRA) since 2008.

9.1.1.2. Member of the organising committees

- Leen Stougie was co-organiser with Nikhil Bansal (TU Eindhoven) and Sem Borst (TU Eindhoven) of the *EURANDOM/Networks* workshop Scheduling under Uncertainty, 1-5 June, 2015, EURANDOM, Eindhoven, The Netherlands.
- Fabrice Vavre organised the symposium "Evolution and ecology of trait loss and dependency" at the 15th Congress of the European Society for Evolutionary Biology, Lausanne, August 9-14, 2015 in collaboration with J. Ellers (Amsterdam).

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

- Pierluigi Crescenzi was a member of the program committee for the following international conferences in 2015: 30th IEEE International Parallel & Distributed Processing Symposium (IPDPS), 8th International Conference on Algorithms and Complexity (CIAC).
- Roberto Grossi was a member of the program committee for the following international conferences in 2015: 26th Annual Symposium on Combinatorial Pattern Matching (CPM), 26th International Workshop on Combinatorial Algorithms (IWOCA), ACM-SIAM Symposium on Discrete Algorithms (SODA).
- Alberto Marchetti-Spaccamela was a member of the program committee for the following international conferences in 2015: 40th International Symposium on Mathematical Foundations of Computer Science (MFCS), 14th International Symposium on Experimental Algorithms (SEA).
- Nadia Pisanti was a member of the program committee for the following international conferences in 2015: 11th International Symposium on Bioinformatics Research and Applications (ISBRA), 22nd International Symposium on String Processing and Information REtrieval (SPIRE), 4th International Symposium on Network Enabled Health Informatics, Biomedicine and Bioinformatics (Hi BI BI), 16th Italian Conference on Theoretical Computer Science (ICTCS), 15th Workshop on Algorithms in BIoinformatics (WABI), IEEE Conference on Information Reuse and Integration in Health Informatics (IEEE IRI-HI), 5th IEEE International Conference on Computational Advances in Bio and Medical Sciences (ICCABS).

- Marie-France Sagot was a member of the program committee for the following international conferences in 2015: 8th International Conference on Algorithms and Complexity (CIAC), 26th Annual Symposium on Combinatorial Pattern Matching (CPM), 17th Portuguese Conference on Artificial Intelligence (EPIA), 23rd Annual European Symposium on Algorithms (ESA), 23rd Annual International Conference on Intelligent Systems in Molecular Biology (ISMB), 40th International Symposium on Mathematical Foundations of Computer Science (MFCS), The Prague Stringology Conference 2015, 19th Annual International Conference on Research in Computational Molecular Biology (RECOMB), 13th RECOMB Satellite Workshop on Comparative Genomics (RECOMB-CG), The 15th Workshop of Algorithms in Bioinformatics (WABI).
- Blerina Sinaimeri was a member of the program committee of the 10th International Workshop on Algorithms and Computation (WALCOM).

9.1.2.2. Reviewer

Besides the above, various other members of ERABLE have been reviewer for other international conferences such as FAW, IWOCA, and WADS.

9.1.3. Journal

9.1.3.1. Member of the editorial board

- Pierluigi Crescenzi is member of the Editorial Board of *Journal of Computer and Systems Science* and *Electronic Notes on Theoretical Computer Science*.
- Roberto Grossi is member of the Editorial Board of *Theory of Computing Systems (TOCS)* and *RAIRO – Theoretical Informatics and Applications – Informatique Théorique et Applications*.
- Alberto Marchetti-Spaccamela is member of the Editorial Board of *Theoretical Computer Science* and *Transaction on Algorithms Engineering*.
- Nadia Pisanti is since 2012 member of Editorial Board of *International Journal of Computer Science and Application (IJCSA)*.
- Marie-France Sagot is member of the Editorial Board of *Lecture Notes in Bioinformatics* (subseries of *Lectures Notes in Computer Science*), *Journal of Discrete Algorithms*, *BMC Bioinformatics*, and *BMC Algorithms for Molecular Biology*.
- Leen Stougie is member of the Editorial Board of *Transactions on Algorithms Engineering* since 2010, *Surveys in Operations Research and Management Science* since 2011, and *Journal of Industrial and Management Optimization* since 2013.

Cristina Vieira is Executive Editor of *Gene*, and since 2014 member of the Editorial Board of *Mobile DNA*.

9.1.3.2. Reviewer for Journals

Members of ERABLE have reviewed papers for the following journals: *Theoretical Computer Science*, *Algorithmica*, *IEEE/ACM Transactions in Computational Biology and Bioinformatics (TCBB)*, *Algorithms for Molecular Biology*, *Scientific Reports*, *Journal of Computational Biology*, *BMC Bioinformatics*, *Computing and Informatics*, *BMC Evolutionary Biology*, *Genetica*, *Gene*, *Genome Biology and Evolution*, *Genetical Research*, *Genome Research*, *Molecular Biology and Evolution*, *Insect Biochemistry and Molecular Biology*, *PLoS Genetics*, *Mutation research*, *mBio*, *Frontiers in Microbiology*, *Infection, genetics and evolution*, *PLoS Biology*.

9.1.4. Invited talks

Pierluigi Crescenzi gave three seminars (University of Padova; FSMP, Paris; Istituto Stensen, Florence); Leandro Ishi Soares de Lima gave a talk at the SeqBio Meeting in Paris; Gunnar Klau gave four invited lectures (CS Colloquium of the Heinrich Heine University Düsseldorf, Germany; Bertinoro Computational Biology 2015, Italy; Amsterdam Data Science Seminar, The Netherlands; Integrated Systems Biology Symposium at Maastricht, The Netherlands); Vincent Lacroix made two invited presentations in the context of training meetings (Formation Bioinformatique pour les NGS Montpellier; Formation FC3Bio Lyon); Alberto

Marchetti-Spaccamela gave two seminars, one at TU Berlin, Germany, and the other at Laboratorio Nazionale CINI-InfoLife, Certosa di Calci, Italy; Nadia Pisanti gave four seminars (IMT Lucca; Laboratorio Nazionale CINI-InfoLife, Certosa di Calci, Italy; Glaxo-Novartis, Siena, Italy; Internet Festival 2015, Pisa, Italy); Blerina Sinaimeri gave three seminars (LIRMM, Montpellier, France; Tor Vergata University of Rome, Italy; Sapienza University of Rome, Italy); Leen Stougie gave an invited plenary lecture at the MOABI-workshop in Paris; Fabrice Vavre gave two invited talks (Symposium Communication between genomes, and Symposium Mathematical modeling and new methods for dengue control, Paris in both cases) and one seminar (University of Groningen, The Netherlands).

9.1.5. Leadership within the scientific community

Alberto Marchetti-Spaccamela is Member of the Council of EATCS, the European Association for Theoretical Computer Science.

Leen Stougie is Chairman of the Dutch Network on the Mathematics of Operations Research (Landelijk Netwerk Mathematische Besliskunde (LNMB)) and member of the Board of the research school ABRI-VU, Amsterdam.

Cristina Vieira is director of the GDRE “Comparative genomics” since the latter was renewed in 2010.

Marie-France Sagot and Fabrice Vavre are members of the Steering Committee of the LabEx Ecofect (http://ecofect.universite-lyon.fr/).

9.1.6. Scientific expertise

Marie-France Sagot is member of the Advisory Board of the CWI, Amsterdam, The Netherlands, and chair of the “Commissions Scientifiques Spécialisées” (CSS) of the INRA for the Department of Applied Mathematics and Computer Science. She was also a Panel Member for the ERC.

Fabrice Vavre is member of the Section 29 of the Comité National de la Recherche Scientifique (CoNRS).

9.1.7. Research administration

Hubert Charles is director of the Biosciences Department of the Insa-Lyon.

Alberto Marchetti-Spaccamela is Director of the Department of Computer, Control, and Management Engineering Antonio Ruberti at Sapienza University of Rome, Italy.

Nadia Pisanti is since 2013 member of the Board of the Regional PhD School of Computer Science at the University of Pisa, Italy; she was in 2015 member of the hiring committee of 2 Researcher positions at the University of Pisa.

Marie-France Sagot was until December 2015 member of the Scientific Advisory Board (“Conseil Scientifique (COS)”) for the Inria Grenoble Rhône-Alpes Research Center.

Alain Viari is since 2012 Deputy Scientific Director at Inria responsible for the domain “Digital Health, Biology and Earth”. He thus represents Inria at several national instances related to Life Sciences, Health and Environment.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Most of the members of ERABLE are Assistant / Associate or Full Professors and as such have a heavy load of teaching. Depending on the country, this represents between 150 to 192 hours in front of a class plus the additional work of preparing the courses and exams, and of correcting the latter. Many are also responsible for some of the university courses at the undergraduate or graduate levels.

More in detail:

- In France:
  - Hubert Charles is responsible for the Master of Modelling and Bioinformatics (BIM) at the Insa of Lyon. He teaches 192 hours per year in statistics and biology.
  - Pierluigi Crescenzi taught 120h (72h of Programming in Java for the undergraduate program in Computer Science and 48 of Distributed Algorithms for the Master in Computer Science) at the University of Florence.
  - Vincent Lacroix is responsible for several courses both at the University (L2: Bioinformatics, L3: Advanced Bioinformatics) and at the Insa (M1: Gene Expression, M2: Introduction to Bioinformatics for Biochemists). He teaches 192 hours per year in bioinformatics and statistics.
  - Arnaud Mary taught 110 hours in 2015 as a recently recruited personnel of the University of Lyon (L1: mathematics; L2: bioinformatics; M1: data analysis; M1: computer science, as well as 8h at the M2 in Computer Science at the ENS Lyon).
  - Cristina Vieira is responsible for the Evolutionary Genetics and Genomics academic career of the Master Ecosciences-Microbiology. She was awarded an IUF (Institut Universitaire de France) distinction and teaches genetics 64 hours per year at the University and ENS Lyon.
- In Italy:
  - Alberto Marchetti-Spaccamela taught 60 hours of Computing Models (undergraduate class) and 30 hours of Privacy in the electronic society (master class) at Sapienza University of Rome.
  - Nadia Pisanti taught 72h (24h of Programming in C for the undergraduate program in Computer Science and 42 of Algorithms for Bioinformatics for the Master in Computer Science) at the University of Pisa.
- In The Netherlands:
  - Gunnar Klau taught 40h (BSc course in Algorithm Engineering) at the Free University of Amsterdam, as well as one day of a two-day summer school for PhD students and postdocs on Biological Network Analysis at Free University Medical Center Amsterdam.

Inria or CNRS Junior and senior researchers as well as PhD students and postdocs are also involved in teaching. Notably Alice Julien-Laferrière (PhD student) taught 80 hours of Applied Mathematics and Bioinformatics at the Department of Biology (undergraduate students); Hélène Lopez-Maestre (PhD student) and Laura Urbini (PhD student) taught each 64 hours of Mathematics and Statistics at the Department of Biology (undergraduate students); Marie-France Sagot (Senior Inria Researcher) taught 6 hours at the Master 2 in Computer Science at the ENS Lyon; Blerina Sinaimeri (Junior Inria Researcher) taught 8h in Discrete Mathematics at the Master of Modelling and Bioinformatics (BIM), INSA, and Master 1 MIV, University Lyon 1, as well as 10h at the Master 2 in Computer Science at the ENS Lyon; Fabrice Vavre taught 25h on symbiosis (L3, M1, M2, University Lyon 1, ENS Lyon, University of Poitiers).

9.2.2. Supervision

The following are the PhDs defended in ERABLE in 2015.

- Sandro Andreotti, FU Berlin, February 2015, supervisor: G. Klau.
- Mohammed El-Kebir, VU University Amsterdam, October 2015, supervisor: G. Klau.
- Mariana Galvão Ferrarini, University of Lyon 1, December 2015, supervisors: M.-F. Sagot and A. Zaha.
- Nela Lekic, University of Maastricht, December 2015, supervisor: L. Stougie, R. Peeters, S. Kelk.

9.2.3. Juries

The following are the PhD or HDR juries to which members of ERABLE participated in 2015.

- Gunnar Klau: Reviewer of the PhDs of Timo Maarleveld, VU Amsterdam, The Netherlands; Kasper Dinkla, TU Eindhoven, The Netherlands; Martina Summer-Kutmon, Maastricht University, The Netherlands; Daniel Taliun, University of Bozen, Italy.
- Nadia Pisanti: Reviewer of the PhD of Michele Schimd, University of Padova, Italy.
- Leen Stougie: Member of the PhD committee of Ward Romeijnders, University of Groningen, The Netherlands; Mohammed El-Bekir, Free University of Amsterdam, The Netherlands.
- Fabrice Vavre: Reviewer of the PhDs of S. Gerritsma, Groningen University, The Netherlands, and Z.S. Wong, University of Quennsland, Australia; member of the PhD committee of R. Stalinski, University of Grenoble Alpes, France; reviewer of the HDR of O. Kaltz, University of Montpellier 2, France; member of the HDR committee of F. Dedeine, University of Tours, France.
- Alain Viari: Reviewer of the HDR of Sarah Cohen-Boulakia and member of the HDR committee of Julie Bernauer, both University of Paris 11, France.

9.3. Popularisation

Laura Urbini and Blerina Sinaimeri participated at the Fête de la Science of Inria. The title of the workshop they presented was: “Du passé au présent : explorons l’évolution”. More information may be found at this address: http://www.inria.fr/centre/grenoble/actualites/fete-de-la-science-les-coulisses-du-numerique.

Fabrice Vavre participated to the “La foire aux savoirs”, Les Subsistances, Lyon on the topic of “Le savoir-faire de nos bactéries”, and to the "Université Ouverte" of the University Lyon 1 on the topic of “Quoi de neuf sur nos relations avec les bactéries”?

GENSCALE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- Workshop on Computational Optimization, Lodz, Poland [A. Mucherino]

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- BIBM 2015: IEEE International Conference on Bioinformatics and Biomedicine [D. Lavenier]
- HPiC 2015: EEE International Conference on High Performance Computing [D. Lavenier]
- PBC 2015: Workshop on Parallel Computational Biology [D. Lavenier]
- RECOMB-SEQ 2015: RECOMB Satellite Workshop on Massively Parallel Sequencing [D. Lavenier]
- WABI 2015: Workshop on Algorithms for Bioinformatics [D. Lavenier]
- BIOKDD 2015: Biological Knowledge Discovery and Data Mining [D. Lavenier]

10.1.2.2. Reviewer

- WABI 2015 [C. Lemaitre]

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Discrete Applied Mathematics [A. Mucherino]

10.1.3.2. Reviewer - Reviewing activities

- Advances in Bioinformatics [D. Lavenier]
- Algorithms for Molecular Biology [D. Lavenier]
- Bioinformatics [C. Lemaitre, D. Lavenier]
- BMC Bioinformatics [D. Lavenier]
- BMC Genomics [D. Lavenier]
- Briefing in Bioinformatics [D. Lavenier]
- Computers and Electronics in Agriculture [A. Mucherino]
- IEEE Transactions on Reconfigurable Technology and Systems [D. Lavenier]
- Journal of Biomedical and Health Informatics [D. Lavenier]
- Plos One [D. Lavenier]
- Journal of Computational and Applied Mathematics [A. Mucherino]
- International Transactions in Operational Research [A. Mucherino]
- Nature Scientific Reports [F. Legeai]
- Nucleic Acids Research [D. Lavenier]

10.1.4. Invited talks

- P. Peterlongo, *Reference-free NGS data analysis*, Litis, Rouen, March 2015.

- A. Mucherino, *Distance Geometry and Discretization Orders*, University of Aveiro, Portugal, May 2015.
- P. Peterlongo, *Mapping reads on de Bruijn graphs*, Bordeaux, Labri team, May 2015.
- A. Mucherino, *The several applications of the Distance Geometry*, University of Florianopolis, Brazil, June 2015.
- C. Lemaitre, *Reference-free detection of genomic variants: from SNPs to inversions*, "ABS4NGS", Institut Curie, Paris, France, June 2015.
- P. Peterlongo, *de Bruijn Graph usage and limitations*, Workshop on the future of algorithmic computational biology, Bertinoro, Italy, June 2015.
- D. Lavenier, *Genomic Data Processing*, "Journée Thématique GDR SoC-SiP", France, Nov. 2015.
- P. Peterlongo, *Prédiction de variants sans (ou avec) génome de référence*, MIA team, Toulouse, Nov. 2015.
- D. Lavenier, *Hybrid assembly based on long reads*, "Journée Scientifique Génomique et Bio-Informatique", France, on Dec. 2015.

10.1.5. Scientific expertise

- Expert for the MEI (International Expertise Mission), French Research Ministry [D. Lavenier]
- Member of the Scientific Council of BioGenOuest [D. Lavenier]
- Member of the Scientific Council of the Computational Biology Institute of Montpellier [D. Lavenier]

10.1.6. Research and teaching administration

- Member of « Conseil pédagogique de l'ISTIC » [R. Andonov]
- Responsible of the 3rd Year Computer Science BSc at ISTIC [R. Andonov]
- Member of the local Inria Rennes CDT (Technologic Transfer Commission) [D. Lavenier]
- Member of the steering committee of the INRA BIPAA Platform (BioInformatics Platform for Agro-ecosystems Arthropods) [D. Lavenier]
- Member of the steering committee of The GenOuest Platform (Bioinformatics Platform of BioGenOuest) [D. Lavenier]
- Representative of the environmental axis of UMR IRISA [C. Lemaitre]
- Inria center referee of Scientific mediation [P. Peterlongo]
- Member of the redaction committee Ouest Inria [P. Peterlongo]
- INRA Engineer recruitment committee [C. Lemaitre]
- Bordeaux University Engineer recruitment committee [C. Lemaitre]
- INRA Engineer recruitment committee, STLO, Rennes [F. Legeai]
- Assistant Professor recruitment committee, University of Brest [D. Lavenier]
- Professor recruitment committee, Polytech Montpellier [D. Lavenier]
- Scientific Responsible for International Relationships at ISTIC [A. Mucherino]
- Member of "Commission Affaires Internationales" at University of Rennes 1 [A. Mucherino]
- Member of the ISA Phd grant attribution jury [P. Peterlongo]
- AGOS first secretary [P. Peterlongo]

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Licence : A. Mucherino, Java basis, 80h, L1, Univ. Rennes 1, France.

- Licence : C. Lemaitre, Statistics for biology, 16h, L3, Univ. Rennes 1, France
- Master : A. Mucherino, Operational Research, 18h, M1, Univ. Rennes 1, France.
- Master : A. Mucherino, Introduction to Computational Systems and Networks, 42h, M1, Univ. Rennes 1, France. : A. Mucherino, Object Oriented Programming, 40h, M1, Univ. Rennes 1, France.
- Master : A. Mucherino, P. Peterlongo and R. Andonov, Algorithms on Sequences and Structures, 36h, M2, Univ. Rennes 1, France.
- Master : A. Mucherino, Parallel Computing (in English), 18h, M1, Univ. Rennes 1, France.
- Master : C. Lemaitre, P. Peterlongo, Text algorithmics for Bioinformatics, 43h, M1, Univ. Rennes 1, France.
- Master : C. Lemaitre, Dynamical systems for biological networks, 20h, M2, Univ. Rennes 1, France.
- Master : P. Peterlongo, Experimental Bioinformactics, 12h, M1, ENS Rennes, France.
- Master : D. Lavenier, Genomic Processing Data, 24h, M2, ESIR, Rennes, France.

10.2.2. Supervision

- PhD defense : Mathilde Le Boudic-Jamin, Similarités et divergences, globales et locales, entre structures proteiques, Univ. Rennes 1., 14/12/2015, supervised by R. Andonov.
- PhD defense : F. Moreews, Concevoir et échanger des workflows d'analyse de données. Application aux traitements intensifs en bioinformatique, Univ. Rennes 1, 11/12/2015, supervised by D. Lavenier and S. Lagarrigue.
- PhD in progress : G. Benoit, New algorithms for comparative metagenomics, start: 11/2014, D. Lavenier and C. Lemaitre
- PhD in progress : A. Limasset, Algorithm for Genomics, start: 09/2014, D. Lavenier and P. Peterlongo
- PhD in progress : C. Guyomar, Bioinformatic tools and applications for metagenomics of bacterial communities associated to insects, start: 10/2015, C. Lemaitre and F. Legeai
- PhD in progress : C. Marchet, Nouvelles méthodologies pour l'assemblage de données de séquençage polymorphes, start: 10/2015, P. Peterlongo
- PhD in progress : P. Hoan Son, Data mining and bioinformatics, start: 01/2015, D. Lavenier and A. Termier.

10.2.3. Juries

- *President of Ph-D thesis jury*. Julien Boutte, University of Rennes 1 [D. Lavenier]; Mouhamadou Ba, INSA Rennes [D. Lavenier], Clovis Galiez, University of Rennes 1 [R. Andonov]
- *Member of Ph-D thesis juries*. François Moreews, University of Rennes [D. Lavenier]
- *Referee of Ph-D thesis*. Nguyen, Thuy Diem, Nanyang Technical University, Singapor [D. Lavenier]; Andrea Radulescu, University of Nantes [D. Lavenier], Deepesh Agarwal, University of Nice [R. Andonov]
- *Member of Ph-D thesis comitees*. J. Laniau, University of Rennes [A. Mucherino]; A. Radulescu, university of Nantes [P. Peterlongo]; L. Siegwald, University of Lille [P. Peterlongo]; A. Mas, University of Rennes [P. Peterlongo]; H. Lopez, University of Lyon [C. Lemaitre]; T. Cumer, University of Grenoble [C. Lemaitre]; D. Eoche-Bosy, University of Rennes [F. Legeai]; H. Boulain, University of Rennes [F. Legeai]; Y., University of Rennes [F. Legeai]; M. Mulot, University of Colmar [F. Legeai].

10.3. Popularization

- Animation of Bioinformatics Atelier at Data Science Symposium (IRISA's 40th anniversary) "De la bioinformatique aux tiques". [P. Peterlongo]
- Open House day for IRISA's 40th anniversary: genomic puzzle [All members of GenScale]
- Participation to the event "A la decouverte de la recherche". [P. Peterlongo]
- Popularization paper in BioFutur [38]

IBIS Project-Team

9. Dissemination

9.1. Research

9.1.1. Scientific events: organizing committees

9.1.1.1. Member of organizing committees

IBIS members	Conference, workshop, school	Date
Hidde de Jong, Johannes Geiselmann	BEeSy Conference on Perspectives in Environmental and Systems Biology, Grenoble	April 2015
Hidde de Jong	CompSysBio: Advanced Lecture Course on Computational Systems Biology, Aussois	April 2015
Delphine Ropers	Séminaires de l'IXXI, Grenoble	2015
Delphine Ropers	Séminaire de Modélisation du Vivant (SeMoVi), Lyon and Grenoble	2015

9.1.2. Scientific events: selection committees

9.1.2.1. Chair of conference program committees

IBIS member	Conference, workshop, school	Role
Eugenio Cinquemani	European Control Conference (ECC) 2015 and 2016	Associate editor
Hidde de Jong	International Conference on Intelligent Systems in Molecular Biology (ISMB) jointly held with European Conference on Computational Biology (ECCB) 2015 and ISMB 2016	Area chair

9.1.2.2. Member of conference program committees

IBIS member	Conference, workshop, program
Hidde de Jong	CMSB 2015, HSB 2015, FOSBE 2016

9.1.3. Journals

9.1.3.1. Member of editorial boards

IBIS member	Journal
Johannes Geiselmann	Frontiers in Microbiology (review editor)
Hidde de Jong	Journal of Mathematical Biology
Hidde de Jong	Biosystems
Hidde de Jong	ACM/IEEE Transactions on Computational Biology and Bioinformatics

9.1.4. Scientific evaluation and expertise

IBIS member	Organism	Role
Johannes Geiselmann	BGene	Member scientific advisory board
Johannes Geiselmann	ANR	Member of selection committee
Johannes Geiselmann	INRA	Member of scientific advisory committee Microbiology Microbiologie, Adaptation, Pathogénie
Johannes Geiselmann	UMR5240 CNRS-UCBL-INSA-BayerCropScience	Member scientific council
Johannes Geiselmann	ARC1, Rhône-Alpes region	Member scientific committee
Hidde de Jong	International Human Frontier Science Program (HFSP)	Member selection and review committees
Hidde de Jong	Microbiology and Food Chain Department, Inra	Member scientific council
Hidde de Jong	BGene	Member scientific advisory board
Delphine Ropers	IXXI, Complex Systems Institute in Lyon	Member scientific board

9.1.5. Recruitment committees

IBIS member	Organism	Recruitment
Johannes Geiselmann	INSA de Lyon	Professor
Delphine Ropers	Inria	Chargés de recherche (jury d'admission)
Delphine Ropers	INSA de Lyon	Assistant professor

9.1.6. Invited talks

Eugenio Cinquemani

Title	Event and location	Date
Reconstruction of promoter activity statistics from reporter protein population snapshot data	Presentation at 54th IEEE Conference on Decision and Control (CDC), Osaka, Japan	December 2015
Reconstructing statistics of promoter switching from reporter protein population snapshot data	Presentation at 4th International Workshop on Hybrid Systems Biology (HSB), Madrid, Spain	September 2015

Hidde de Jong

Title	Event and location	Date
Global physiological effects and the analysis of gene regulatory networks	Invited talk at Lorentz center workshop Integrated cell models, Leiden, the Netherlands	January 2015
Modeling gene regulatory networks by means of piecewise-linear models	Invited talk during Spring school on Sliding mode control: theory and applications, Aussois	June 2015
Integrated models of the cell: metabolism, gene expression, signalling	Tutorial at CompSysBio: Advanced Lecture Course on Computational Systems Biology, Aussois	March 2015
Analysis and control of bacterial regulatory networks	Seminar Centre for Research and Interdisciplinarity (CRI), INSERM, Paris, with Johannes Geiselmann and Delphine Ropers	June 2015
Accounting for global physiological effects in the analysis of gene regulatory networks	Seminar BrisSynBio, University of Bristol, UK	February 2015
Global physiological effects in the analysis of gene regulatory networks	Invited talk ETH Systems biology student retreat, Reichenau, Germany	September 2015

Johannes Geiselmann

Title	Event and location	Date
Analysis and control of bacterial regulatory networks	Seminar Centre for Research and Interdisciplinarity (CRI), INSERM, Paris, with Hidde de Jong and Delphine Ropers	June 2015
A synthetic growth switch and its biotechnological application	Presentation at BioSynSys Conference, Paris	September 2015
Control of bacterial growth	Seminar ENS Cachan	December 2015

Nils Giordano

Title	Event and location	Date
Understanding regulatory strategies for dynamical resource allocation in microorganisms	Presentation at CompSysBio (Advanced Lecture Course on Computational Systems Biology), Aussois	April 2015
Dynamical allocation of cellular resources as an optimal control problem: Novel insights into microbial growth strategies	Invited presentation at Séminaire de Modélisation du Vivant (SeMoVi), Grenoble	October 2015
Dynamical allocation of cellular resources as an optimal control problem: Novel insights into microbial growth strategies	Poster at Journée Annuelle des Doctorants de l'Ecole Doctorale CSV, Grenoble	October 2015

Stéphan Lacour

Title	Event and location	Date
Characterization of the Escherichia coli sigmaS core regulon by Chromatin Immunoprecipitation-sequencing (ChIP-seq) analysis: regulation of ncRNA by the alternative sigmaS factor	Regulating with RNA in Bacteria and Archaea Conference, Cancun, Mexico	December 2015

Delphine Ropers

Title	Event and location	Date
Analysis and control of bacterial regulatory networks	Seminar Centre for Research and Interdisciplinarity (CRI), INSERM, Paris, with Hidde de Jong and Johannes Geiselmann	June 2015
Adaptation of E. coli growth to environmental cues: global control of gene expression and post-transcriptional regulation	CEA Grenoble	November 2015

9.1.7. Research administration

IBIS member	Committee	Role
Eugenio Cinquemani	Inria Grenoble - Rhône-Alpes	Member Commission des Emplois Scientifiques
Eugenio Cinquemani	Comité des Utilisateurs des Moyens Informatiques (CUMI), Inria Grenoble - Rhône-Alpes	Member
Johannes Geiselmann	Department of Biology, Université Joseph Fourier	Member scientific council
Hidde de Jong	Grenoble - Rhône-Alpes research centre, Inria	Member scientific council
Hidde de Jong	Conseil d'Orientation Scientifique et Technique (COST), Inria	Member working group on International Relations
Delphine Ropers	Référente chercheurs, Inria Grenoble - Rhône-Alpes	
Delphine Ropers	Commission de Formation Permanente, Inria Grenoble - Rhône-Alpes	Member
Delphine Ropers	Inria	Member of Commission d'évaluation

9.2. Teaching - Supervision - Committees

9.2.1. Teaching

Four members of the IBIS team are either full professor, associate professor or assistant professor at the Université Grenoble Alpes. They therefore have a full teaching service (at least 192 hours per year) and administrative duties related to the organization and evaluation of the university course programs on all levels (from BSc to PhD). Besides the full-time academic staff in IBIS, the following people have contributed to courses last year.

Eugenio Cinquemani

Master: Identification of dynamical models of genetic networks, M2, BIM, INSA de Lyon (4 h)

Master: Statistics for biologists, M1, Master Approches Interdisciplinaires du Vivant, CRI/Université Paris Descartes (24 h)

Master: Modelling and identification of metabolic networks, M1, Phelma, INP Grenoble (4 h)

Hidde de Jong

Master: Modeling and simulation of gene regulatory networks, M2, BIM, INSA de Lyon (20 h)

Master: Integrated models of the cell: metabolism, gene expression, signalling, with Nils Giordano, M2, ENS Paris (8 h)

Nils Giordano

Master: Integrated models of the cell: metabolism, gene expression, signalling, with Hidde de Jong, M2, ENS Paris (8 h)

Master: Génétique des populations et biologie de la conservation, M1, Université Grenoble Alpes (6 h)

Bachelor: La bio-informatique : de l'analyse du génome à la modélisation, L2, Université Grenoble Alpes (24 h)

Bachelor: Génétique prokaryote, L2, Université Grenoble Alpes (40 h)

Bachelor: Génétique des populations, L2-L3, Université Grenoble Alpes (27 h)

Delphine Ropers

Master: Modelling in systems biology, M1, Phelma, INP Grenoble (16 h)

Master: Modeling and simulation of genetic regulatory networks, M1, Université Grenoble Alpes (7.5 h)

Master: Modeling and simulation of genetic regulatory networks, M2, INSA de Toulouse (5 h)

François Rechenmann

E-learning: MOOC Bioinformatics: Genomes and Algorithms (http://www.inria.fr/actualite/actualites-inria/mooc-bioinformatique-genomes-et-algorithmes)

9.2.2. Supervision

PhD: **Manon Morin**, Rôle du régulateur post-transcriptionnel CSR dans l'adaptation métabolique de la bactérie modèle *Escherichia coli*, November 2015. Supervisors: Muriel Cocaign-Bousquet (INRA) and Delphine Ropers

PhD: **Stéphane Pinhal**, Adaptation d'*E. coli* à la croissance sur acétate : une approche pluridisciplinaire, Université Grenoble Alpes, March 2015. Supervisors: Johannes Geiselmann, Delphine Ropers, and Hidde de Jong

PhD: **Valentin Zulkower**, Etude de la dynamique des mécanismes de la répression catabolique : des modèles mathématiques aux données expérimentales, Université Grenoble Alpes, March 2015. Supervisors: Hidde de Jong, Johannes Geiselmann, and Delphine Ropers

PhD in progress: **Stefano Casagranda**, Analysis and control of cell growth models. Supervisors: Jean-Luc Gouzé (BIOCORE) and Delphine Ropers

PhD in progress: **Nils Giordano**, Régulation de la croissance chez *Escherichia coli* : étude théorique et expérimentale à l'aide de modèles coûts-bénéfices. Supervisors: Hidde de Jong and Johannes Geiselmann

PhD in progress: **Bernard Chielli Ponce de Leon**, Stochasticity of gene expression in strains of *E. coli* with a controlled growth rate and number of chromosomes. Supervisors: Irina Mihalcescu (Université Grenoble Alpes) and Johannes Geiselmann

9.2.3. PhD thesis committees, PhD advisory committees, and habilitation committees

PhD thesis committees

IBIS member	Role	PhD student	University	Date
Johannes Geiselmann	Membre	Stéphane Pinhal	Université Grenoble Alpes	March 2015
Johannes Geiselmann	Membre	Valentin Zulkower	Université Grenoble Alpes	March 2015
Johannes Geiselmann	Rapporteur	Marie Carquet	Université Paul Sabatier, Toulouse	March 2015
Johannes Geiselmann	Membre	Marie-Cecilia Duvernoy	Université Grenoble Alpes	November 2015
Johannes Geiselmann	Membre	Christopher Swale	Université Paul Grenoble Alpes	November 2015
Johannes Geiselmann	Rapporteur	Aleksandra Delplanque	Université Paris-Saclay	December 2015
Hidde de Jong	Rapporteur	Thomas Todd	University of Bristol, UK	February 2015
Hidde de Jong	Rapporteur	Thomas Duigou	Université Paris Sud	May 2015
Hidde de Jong	Rapporteur	Abhishekh Gupta	Tampere University of Technology, Finland	June 2015
Hidde de Jong	Président	Adrien Richard	Université Paris Descartes	December 2015
Hidde de Jong	Invité	Stéphane Pinhal	Université Grenoble Alpes	March 2015
Hidde de Jong	Membre	Valentin Zulkower	Université Grenoble Alpes	March 2015
Stéphan Lacour	Examinateur	Xuejiao Jiang	INSA de Lyon	September 2015
Delphine Ropers	Membre	Stéphane Pinhal	Université Grenoble Alpes	March 2015
Delphine Ropers	Membre	Valentin Zulkower	Université Grenoble Alpes	March 2015
Delphine Ropers	Examinateur	Ismail Belgacem	Université de Nice-Sophia Antipolis	March 2015
Delphine Ropers	Membre	Manon Morin	Université de Toulouse	November 2015

habilitation (HDR) committees

IBIS member	Role	PhD student	University	Date
Johannes Geiselmann	Membre	Gilles Curien	Université Grenoble Alpes	February 2015

PhD advisory committees

IBIS member	PhD student	University
Eugenio Cinquemani	Artemis Llamosi	Université Paris Descartes
Johannes Geiselmann	Jean-Baptiste Lugagne	Université Paris Descartes
Stéphan Lacour	Alexandre Duprey	INSA de Lyon
Delphine Ropers	Alice Julien-Laferrière	Université de Lyon
Delphine Ropers	Martin Wannagat	Université de Lyon

9.2.4. Teaching adminstration

Yves Markowicz is director of the BSc department at Université Joseph Fourier.

Michel Page is coordinator of the master Systèmes d'information et d'organisation at the Institut d'Adminstration des Entreprises (IAE), Université Grenoble Alpes.

Delphine Ropers organizes a module on the mathematical modeling of biological systems at PHELMA, INP Grenoble.

Hidde de Jong organizes with Daniel Kahn a module on the modeling of genetic and metabolic networks at INSA de Lyon.

LIFEWARE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Grégory Batt, Pascal Hersen, and Denis Thieffry organized the 2nd International Conference on Design, optimization and control in systems and synthetic biology, DOC'15, November 12-13, 2015, ENS, Paris.
- François Fages was co-chair with Nicolas Beldiceanu of the 6th International Workshop on Bin Packing and Placement Constraints, BPPC'15 associated to CP'15, 31st August 2015, Cork, Ireland.
- François Fages is member of the Steering Committee of the International Conference on Computational Methods for Systems Biology since 2008.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Grégory Batt was member of the program committees of :
  - HSB'15 Fourth International Workshop on Hybrid Systems Biology, Madrid, Spain, September 3-4, 2015
  - CMSB'15, 13th International Conference on Computational Methods in Systems Biology, Nantes, France, Sept. 16-18, 2015.
- François Fages was member of the program committees of :
  - IJCAI'16 25th International Joint Conference on Artificial Intelligence, New York, USA, 2016.
  - CIE'16 Computability in Europe, Paris, 2016.
  - HSB'15 Fourth International Workshop on Hybrid Systems Biology, Madrid, Spain, September 3-4, 2015
  - CP'15 21st International Conference on Principles and Practice of Constraint Programming, Cork, Ireland, Aug 31-Sep 4, 2015.
  - ICLP'15 31st International Conference on Logic Programming, Cork, Ireland, Aug 31-Sep 4, 2015.
  - WCB'15 11th Workshop on Constraint-based methods for Bioinformatics, associated to CP'15, Cork, Ireland, August 31st 2015.
  - CMSB'15, 13th International Conference on Computational Methods in Systems Biology, Nantes, France, Sept. 16-18, 2015.
  - LMBS'15, 1st International Workshop on Logical Modeling of Biological Systems, satellite workshop of CMSB'15, Nantes, France, Sept. 18, 2015.
  - VEMDP'15, Verification of Engineered Molecular Devices and Programs, July 19, 2015, San Francisco, USA.
  - FroCoS'15, Wroclaw, Poland, 15-19 Sep 2015.
- Sylvain Soliman was member of the program committee of:

– WCB'15 11th Workshop on Constraint-based methods for Bioinformatics, associated to CP'15, Cork, Ireland, August 31st 2015.

9.1.3. Journal

9.1.3.1. Member of the editorial boards

François Fages is member of

- the Editorial Board of the Computer Science area of the Royal Society Open Science journal since 2014
- the Editorial Board of the journal RAIRO OR Operations Research since 2004

9.1.3.2. Reviewer - Reviewing activities

- Grégory Batt and Jean-Baptiste Lugagne were reviewers for the journal *ACS Synthetic Biology*. Grégory Batt was reviewer for the *Journal of Molecular Biology*.
- Chiara Fracassi was reviewer for the journal *Epidemiology and Infection*.
- François Fages and Pauline Traynard were reviewers for *Theoretical Computer Science*. François Fages was reviewer for *PLoS Computational Biology, Transaction on Computational Biology and Bioinformatics, Theoretical Computer Science, Acta Biotheoretica, Transactions on Computational Logic,* and *Journal of Constraints*.

Sylvain Soliman was reviewer for *BMC Systems Biology, AMS Math Reviews, PLoS One*, and *Bioinformatics*.

9.1.4. Invited talks

- Virgile Andréani gave an invited talk at the Journée nationale du groupe de travail BIOSS, 23 Nov 2015.
- Grégory Batt gave invited talks at
  - workshop Integrative cell models: Bridging microbial physiology and systems biology, Leiden, the Netherlands (short talk), January 2015
  - Institute of Genetics and Development of Rennes, Reverse Engineering Cell Division team, February 2015
  - Interdisciplinary Computing and Complex BioSystems group, Newcastle University, UK, May 2015
  - Laboratoire de Biologie Moléculaire de la Cellule, ENS Lyon, October 2015
- François Bertaux gave an invited talk at the conference Design, Optimization and Control of Systems and Synthetic Biology, ENS Paris, Nov 2015.
- François Fages gave invited talks at
  - University of Bonn, Bioinformatics Seminar, Germany, 11 December 2015,
  - CNRS Sys2Diag lab, Montpellier, 8 December 2015,
  - Journée nationale du groupe de travail BIOSS, Paris, 23 November 2015,
  - National Taiwan University, Biology Dept., Taipei, Taiwan, 14 July 2015
  - National Taiwan University, Electrical Engineering Dept., Taipei, Taiwan, 15 July 2015
  - CIRM, "Méthodes de réduction de modèles discrets", Marseille, 28 May 2015
  - aSSB'15 Thematic Research School, Strasbourg, 23-27 March 2015
- Artemis Llamosi gave an invited talk at the Conference Lyon SysBio 2015, November 2015
- Jean-Baptiste Lugagne gave an invited talk at the conference Design, Optimization and Control of Systems and Synthetic Biology, ENS Paris, Nov 2015.
- Chiara Fracassi gave an invited talk at BioSynSys'15, the first conference of the GDR Synthetic and Systems Biology, Paris Diderot U, Sept 2015.

9.1.5. Leadership within the scientific community

- Grégory Batt is a member of
  - the IEEE/CSS Technical Committee on Systems Biology,
  - the scientific board of the GDR de Biologie de Synthèse et des Systèmes
  - the GDR de Bioinformatique Moléculaire, in charge of the axis on Biological network modelling, systems biology and synthetic biology
- François Fages is a member of the Steering Committee of the international conference series Computational Methods in Systems Biology since 2008

9.1.6. Scientific expertise

Grégory Batt was member of the review and selection panels of ERASysAPP, an ERA-NET for Systems Biology Applications (Gothenborg, April 2015). He was also a reviewer for ANR blanc programme. He is a member of the scientific committee of the Advanced Lecture Course on Computational Systems Biology summer school. He has also served as a mentor in the workshop Teaching Through Research of the Leadership Program, organised by the Centre for Research and Interdisciplinarity under the auspice of the "learning science" UNESCO chair (April 2015, Paris).

François Fages is a member of the Scientific Council of the *Doctorate School "Frontières Du Vivant"* at *Center for Research and Interdisciplanirity*, Universities Paris Descartes and Paris Diderot (since 2010). He was a member of the *Comité de Sélection* for a Professorship position in Section 27 in Lille and member of the jury for the *Prix de thèse Gilles Kahn* of the *Société Informatique de France*.

9.1.7. Research administration

François Fages is member of the "Bureau du Comité des Projets" of Inria Paris-Rocquencourt.

Sylvain Soliman is president of the "Comité de Suivi Doctoral" and of the "Commission de Dévelopement Technologique" of Inria Paris-Rocquencourt.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Grégory Batt, *Computational Biology*, coordinator 48h, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master: Grégory Batt (6h), Denis Thieffry (coordinator), *Dynamical Modelling of Cellular Regulatory Networks*, M2, Interdisciplinary Master in Life Science at the Ecole Normale Supérieure, Paris.

Master: François Fages (coordinator module 48h, teaching 12h), Grégory Batt (12h), Denis Thieffry (12h), C2-19 *Computational Methods for Systemic and Synthetic Biology*, Master Parisien de Recherche en Informatique (MPRI), Paris.

Master: Chiara Fracassi, *Dynamics of Living Systems*, 24h, M1, Master Approches Interdisciplinaires du Vivant (AIV).

Master: Thierry Martinez, *Développement logiciel*, 17h, M1, Ecole des Ponts et Chaussée, Champs-sur-Marne.

Master: Sylvain Soliman, C2-35-1 *Constraint Programming*, coordinator and teaching 24h, M2, Master Parisien de Recherche en Informatique (MPRI), Paris.

Master: Pauline Traynard, *Introduction to Linux and Programming with Python and R*, M1, M2, 30h, master IMaLiS du département de biologie de l'ENS,

9.2.2. Supervision

PhD : Katherine Chiang, *Biomolecular Computing System Design: Architecture, Synthesis, and Simulation*, National Taiwan University, Taipei, Taiwan (Sep 2012), Dir. Jie-Hong Jiang and François Fages, 13 July 2015.

PhD : Steven Gay, *Subgraph Epimorphisms: Theory and Application to Model Reductions in Systems Biology*, Université Paris Diderot, Paris (Oct 2009), Dir. François Fages and Sylvain Soliman, 26 May 2015.

PhD : Artémis Llamosi, Université Paris Diderot, Paris (Nov 2012), Dir. Grégory Batt and Pascal Hersen (MSC), 15 Dec 2015.

PhD : Thierry Martinez, *Execution models for Constraint Programming: kernel language design through semantics equivalence*, Université Paris Diderot, Paris (Oct 2009), Dir. François Fages, 17 December 2015

PhD in progress : François Bertaux, Université Pierre et Marie Curie, Paris (Sept 2011), Dir. Dirk Drasdo (EPI MAMBA) and Grégory Batt

PhD in progress : Jean-Baptiste Lugagne, Université Paris Diderot, Paris (Oct 2012), Dir. Grégory Batt and Pascal Hersen (CNRS, MSC)

PhD in progress : Jonas Sénizergues, Université Paris Diderot, Paris (Oct 2015), Dir. François Fages and Sylvain Soliman

PhD in progress : Pauline Traynard, Université Paris Diderot, Paris (Oct 2012), Dir. François Fages and Denis Thieffry (ENS)

9.2.3. Juries

- PhD Alexis Courbet, “Engineering autonomous and programmable biosensors through synthetic biology: integrating multiplexed biomarker detection and biomolecular signal processing into next-generation diagnostics”, Univ. Montpellier, 7 December 2015, Invited Examiner: François Fages
- PhD Christopher Banks, “Spatio-temporal Logic for the Analysis of Biochemical Models”, 28 Jan 2015, Univ. of Edimburgh, Scotland, Reviewer: François Fages
- PhD Erwan Bigan, “Minimal conditions for protocell growth”, Dec 2015, Ecole Polytechnique, France, Reviewer: Gregory Batt

9.3. Popularization

Pascal Hersen and Artémis Llamosi are founders of the *OpenLab* at the *Center for Research and Interdisciplanirity* in Paris, and organizers of related events on product industrialization. They provide scientific expertise to hosted startups.

MORPHEME Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

Xavier Descombes was member of the organization board for the "OPTITECH Event 2015".

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

Laure Blanc-Féraud was associate editor of the workshop on New Computational Methods in Inverse Problems - NCMIP 2015 (NCMIP) in ENS Cachan.

Eric Debreuve was the Area Chair of the topic ”Image and video processing” for the conference European Signal Processing Conference (EUSIPCO).

9.1.2.2. Reviewer

Laure Blanc-Féraud was a reviewer for the conferences ISBI, ICIP, and ICASSP.

Eric Debreuve was a reviewer for the conferences ISBI, ICIP, and ACIVS.

Xavier Descombes was reviewer for the conferences ISBI, ICIP, and ICASSP.

Grégoire Malandain was reviewer for the conferences ISBI, MICCAI, EMBC and TAIMA.

9.1.3. Journal

9.1.3.1. Member of the editorial boards

Laure Blanc-Féraud is Associate Editor of SIAM Journal Imaging Sciences and Traitement du Signal Journal.

Xavier Descombes is associated editor of DSP (Digital Signal Processing).

9.1.3.2. Reviewer - Reviewing activities

Eric Debreuve was reviewer for the journals Journal of Computational Physics (Elsevier), Pattern Recognition (Elsevier) and Revue de Traitement du Signal.

Xavier Descombes was reviewer for the journals IEEE TMI, IEEE IP, and IEEE SP.

Grégoire Malandain was reviewer for the journals MedIA, NeuroImage, IEEE TMI, and Medical Physics.

9.1.4. Invited talks

Grégoire Malandain was invited to give a talk at the *journées* "Bioimage-informatics", organized by the GDR 2588, and at "OPTITECH Event 2015".

9.1.5. Leadership within the scientific community

Laure Blanc-Féraud is director of GdR 720 ISIS of CNRS, a group for the animation of research at national french level on the thematics Signal Image and Vision. This group includes around 160 academic laboratories and twenty industrial partners totaling almost 3,000 members. She is member of the IEEE BISP (Biomedical Imaging Signal Processing) Technical Committee.

Xavier Descombes is member of the Scientific Committee of the competitivness pole Optitech, member of IEEE BISP (Biomedical Imaging Signal Processing) Technical Committee and member of the Scientific Committee of Labex SIGNALIFE.

Grégoire Malandain is member of the IEEE/EMB Technical Committee on Biomedical Imaging and Image Processing (BIIP). He is an invited member of the Scientific Committee of the MIA department of INRA.

9.1.6. Scientific expertise

Laure Blanc-Féraud is part of the scientific committee of laboratory GreyC (UMR CNRS 6072) and of "'Institut des Technologies Avancées en sciences du Vivant" (ITAV, USR CNRS 3505). She was part of the AERES expert committee of LJK Lab in Grenoble and part of the recruitment panel of a MCF at ISAE Toulouse and a "Comité de sélection" of a professor at the institute of Mathematics in Toulouse (IMT). She was external expert for the CPER Région Poitou-Charentes, and expert for PES applications for Région Franche-Comté. She was member of the jury of the price "La Recherche" She was member of the CNRS admission for chargé de recherche at INS2I of CNRS. She is expert member of the MIUR: Italian Ministry for Education, University and Research (Italie).

Eric Debreuve was a reviewer of a ”Jeune chercheur” ANR proposal.

Xavier Descombes is expert for the MESR within the CIR program, and reviewer for three ANR proposals.

9.1.7. Research administration

Xavier Descombes is member of the "comité des projets" and the "comité de centre" of Inria CRI-SAM.

Grégoire Malandain is the head of the committee "Comité de suivi doctoral” of the Inria CRI-SAM.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Xavier Descombes, Traitement d’images, Analyse de données, Techniques avancées de traitement d’images, 30h Eq. TD, Niveau M2, ISAE, France.

Master : Xavier Descombes, Traitement d’images, master ISAB, 12h Eq. TD, Niveau M2, Université de Nice Sophia Antipolis, France.

Master : Xavier Descombes, Traitement d’images, master VIM, 12h Eq. TD, Niveau M2, Universitéde de Nice Sophia Antipolis, France.

Master : Xavier Descombes, Bio-imagerie, master IRIV, 6h Eq. TD, Niveau M2, Université de Strasbourg, France

Master : Xavier Descombes, Bio-imageire, 9h Eq. TD, Niveau M2, Université de Nice Sophia Antipolis, France.

Master : Agustina Razetti, Traitement d’images, master ISAB, 6h Eq. TD, Niveau M2, Université de Nice Sophia Antipolis, France.

IUT : Agustina Razetti, Initiation à la mesure du signal, 18h Eq. TD, IUT Nice Côte d’Azur, Université de Nice Sophia Antipolis, France.

Master : Laure Blanc-Féraud, Fluorescence image restoration, 18h Eq. TD, M2 Computational Biology , University Nice Sophia Antipolis, France

Master : Laure Blanc-Féraud, Image restoration, 12h Eq. TD, M2 ISAB, University Nice Sophia Antipolis, France

Master : Laure Blanc-Féraud, Traitement numérique des images, 12h Eq. TD, M2 VIM , EPU University Nice Sophia Antipolis, France

Master 2: Eric Debreuve, Introduction to Inverse Problems in Image Processing, 28h Eq. TD, International Master “Computational Biology and Biomedicine”, University Nice Sophia Antipolis.

Engineer 5th year: Eric Debreuve, 3D Computer Vision with the Kinect sensor, 32h Eq. TD , Polytech'Nice Sophia, University Nice Sophia Antipolis.

Master: Emmanuel Soubies, Traitement Numérique des Images, 10h Eq. TD, Niveau M2, EPU, Université de Nice Sophia Antipolis, France.

Licence: Emmanuel Soubies, Images et Filtres, 54h Eq. TD, Niveau L3 , EPU, Université de Nice Sophia Antipolis, France.

9.2.2. Supervision

PhD: Alexis Zubiolo, Statistical Machine Learning for Automatic Cell Classification, Nice Sophia Antipolis university, defended december the 11th., Eric Debreuve (advisor).

PhD in progress: Lola Baustista, DIC microscopy image reconstruction, 1st november 2013, Laure Blanc-Féraud.

PhD in progress: Gaël Michelin, Quantitative tools for morphogenesis study, 1st october 2013, Grégoire Malandain (advisor).

PhD in progress: Agustina Razetti, Modelling and characterizing axon growth from in vivo data, 1st november 2014, Xavier Descombes (advisor), Florence Besse (co-supervisor).

PhD in progress: Emmanuel Soubies, MA-TIRF reconstruction and sparse l2-l0 optimization problem, 1st october 2013, Laure Blanc- Féraud and Sébastien Schaub.

9.2.3. Internships

Nicolas Cedilnik: L3 UNS. Detection and Classification of Cells Nuclei. Supervisors: X. Descombes, F. Besse.

Yaqun Liu: LM1 UNS. Tracking Growing Axons in 3D+t Microscopy Images. Supervisors: G. Malandain and C. Medioni.

Wei Shen: M2 Univ. Caen, RNA complex detection from confocal microscopy images. Supervisors: F. Besse, X. Descombes

Sen Wang: M2 Univ. Caen, Multiple Births and Cut algorithm including attractive interactions. Supervisors: E. Soubies, X. Descombes.

9.2.4. Juries

Laure Blanc-Féraud participated as chair to the PhD thesis committee of G. Tartavel (LTCI, Télécom ParisTech), as reviewer of the HDR of Anne Keonig (CEA LETI Grenoble) and reviewer of the 4 PhD theses: L. Gharsalli (Supelec, L2S, Gif sur Yvette), P. Irrera (LTCI, Télécom ParisTech), C Sutour (IMB Bordeaux), O. Chabiron (IRIT Toulouse).

Xavier Descombes was examinator in the jury of A. Zubiolo and P. Cracium PhD defenses at University of Nice Sophia Antipolis and in the jury of Y. Quéau PhD defense at Paul Sabatier University (Toulouse) . He was reviewer for two PhD dissertations (M. Alsheh Ali at Paris V and R. Ben Salah, university of Poitiers) and one HdR (S. Chafik, university of Clermont Ferrand). He was president of three PdH juries (C. Meillier, university of Grenoble, S.G. Yeong, university of Nice Sophia Antipolis and R. Ben Salah, university of Poitiers).

Grégoire Malandain participated as chair to the PhD thesis committee of L. Guignard (Montpellier univ.), as reviewer to the PhD thesis of I. Melki (Paris Est univ.), H. Mi (Rouen univ.), M. Mustafa (Nottingham univ.), M. Vandenberghe (UPMC), W. Zhu (Strasbourg univ.), and as reviewer to the HdR of T. Delzescaux (UPMC).

9.3. Popularization

Gaël Michelin, Emmanuel Soubies, and Alexis Zubiolo participated as exhibitors to the "Fête de la science 2015" manifestation in Juan-les-Pins (palais des congrès).

PLEIADE Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Journal

8.1.1.1. Member of the editorial boards

Pascal Durrens is a member of the editorial board of the journal ISRN Computational Biology. David Sherman is a member of the editorial board of the journal Computational and Mathematical Methods in Medicine.

8.1.1.2. Reviewer - Reviewing activities

Pascal Durrens was reviewer for the journal BMC Genomics.

8.1.2. Scientific expertise

Pascal Durrens is an expert in Genomics for the Fonds de la Recherche Scientifique-FNRS (FRS-FNRS), Belgium. David Sherman is an expert for INRA's "Microbial Ecosystems and Metaomics" program.

8.2. Teaching - Supervision - Juries

8.2.1. Supervision

PhD: Razanne Issa, *Analyse symbolique et inférence de modèles métaboliques*, Université de Bordeaux, July 10, 2015. Thesis director: David Sherman.

8.2.2. Juries

Mid-term PhD review: Julie Laniau, Université de Rennes, October 1, 2015. Thesis director: Anne Siegel. Examinator: David Sherman

8.3. Popularization

David Sherman participated in popularization activities based on Thymio-II mobile robots for education, coordinated by the Mobsya association and EPFL (Switzerland). He contributed code to the Aseba project for piloting Thymio-IIs from the Scratch programming language, assisted in teaching at the Flornoy elementary school, and organized a team in the R2T2 event (http://r2t2.org) on November 4, 2015.

SERPICO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

Charles Kervrann was member of the organizing committee of the international "Quantitative BioImaging" (QBI'15) conference, Institut Pasteur, Paris, January 2015 (180 participants).

Frédéric Lavancier and Charles Kervrann are head of the organizing committee of the international workshop "Spatial Statistics and Image Analysis in Biology" (SSIAB'16), Inria Rennes, May 2016.

Frédéric Lavancier is head of the workshop "Spatio-temporal models and statistics", IRMAR University of Rennes 1, LMJL University of Nantes, ENSAI, University of Rennes 2, INRA Rennes, Inria Rennes.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

Charles Kervrann: Associated Editor for the conference ISBI'2015, member of the program committee of JOBIM'15 (Clermont-Ferrand), member of the scientific committee "Journées d'Imagerie Optique Non-Conventionnelle" (JIONC'2015, JIONC'2016).

Patrick Bouthemy: Associate Editor for the conference ISBI'2016.

Thierry Pécot: member of the program committee of BIOIMAGING'2016.

10.1.2.2. Reviewer

Charles Kervrann: reviewer for ICIP'2015, ICASSP'2015, SSVM'2015, EMMCPRV'2015, NIPS'15, ICASSP'2016, ISBI'2016.

Patrick Bouthemy: reviewer for ICIP'2015, ISBI'2015.

Frédéric Lavancier: reviewer for "Spatial Statistics: Emerging Patterns" 2015.

Thierry Pécot: reviewer for ISBI'2015, ISBI'2016, BIOIMAGING'2016.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

Charles Kervrann is Guest Editor of the special issue entitled "Advanced Signal Processing in Microscopy and Cell Imaging" of the IEEE Selected Topics in Signal Processing Journal (publication in February 2016).

Charles Kervrann is Associate Editor of the IEEE Signal Processing Letters journal (since January 2015).

Patrick Bouthemy is co-editor in chief of the open access journal Frontiers in ICT, specialty Computer Image Analysis.

10.1.3.2. Reviewer - Reviewing activities

Charles Kervrann: BMC Bioinformatics, IEEE Transactions on Image Processing, Journal Mathematical Imaging and Vision, Medical Image Analysis, Traitement du Signal.

Patrick Bouthemy: IEEE Transactions on Image Processing, Medical Image Analysis, Mathematical Problems in Engineering.

Frédéric Lavancier: Applications of Mathematics, Bernoulli, Computational Statistics and Data Analysis, Journal of the Royal Statistical Society Series B, R Journal, Médecine/Sciences, Metrika, Statistics.

Thierry Pécot: Bioinformatics.

10.1.4. Invited talks

Charles Kervrann:

Seminar Mine-Telecom & University of Paris Descartes, PEWA: Patch-based Exponentially Weighted Aggregation for image denoising, Paris, December 2015.

Seminar IBC LIRMM, Imagerie biologique à l'échelle cellulaire: enjeux et défis en traitement d'images, Montpellier, December 2015.

GdR Plasmonique Moléculaire et Spectrosocopies Exaltées (PMSE), Imagerie biologique à l'échelle cellulaire: analyse quantitative de la diffusion, Inria Rocquencourt, November 2015.

GdR Microscopie et Imagerie du Vivant (MIV), A statistical test to detect non Brownian diffusion adapting to the length of the observed trajectory (with V. Briane), ENS Lyon, Novembre 2015.

Seminar INSA Rouen, PEWA: Patch-based Exponentially Weighted Aggregation for image denoising, Rouen, November 2015.

Invited talk Researcher School "Biophysics: from Measurements to Models in Biology", Biological imaging: context and challenges in image processing, 2 hours, Les Houches, Octobre 2015.

Seminar Telecom-Physique Strasbourg, Imagerie biologique à l'échelle cellulaire: enjeux et défis en traitement d'images, Strasbourg, June 2015.

Invited talk PhD School I2S LIRMM, Imagerie biologique: enjeux et défis en traitement d'images, 3 hours, Montpellier, April 2015.

Invited talk "Quantitative BioImaging" (QBI'15) conference, Joint localization estimation and classification of membrane dynamics in TIRF microscopy image sequences (with J. Salamero), Paris, January 2015.

Thierry Pécot:

Invited talk "Cycle de vie des images en microscopie", Mobyle@SERPICO: Image processing methods on a Mobyle Web Portal (with C. Kervrann), Paris, December 2015.

GdR Microscopie et Imagerie du Vivant (MIV) (Mini-symposium on BioImage Informatics), Counting-based particle flux estimation for traffic analysis in live cell imaging (with C. Kervrann, J. Salamero and J. Boulanger) , Paris, November 2015.

Invited talk FBI Annual Meeting, Particle flux estimation for traffic analysis in live cell imaging (with C. Kervrann, J. Salamero and J. Boulanger), Paris, September 2015.

Contributed talk "Quantitative BioImaging" (QBI'15) conference, A quantitative approach for space-time membrane trafficking orientation (with J. Boulanger, P. Bouthemy, S. Bardin, J. Salamero and C. Kervrann, Paris, January 2015.

Invited talk European BioImage Analysis Symposium (EuBIAS'15), Mobyle@SERPICO: Image processing methods for the temporal analysis of moving particles on a Mobyle Web Portal (with C. Kervrann), Paris, January 2015.

Frédéric Lavancier:

Seminar of University of Paris 6, A general procedure to combine estimators, Paris, March 2015.

Seminar of University of Toulouse 3, Determinantal point process models and statistical inference, Toulouse, October 2015.

Seminar Institut Henri Poincaré (IHP), Determinantal point process models and statistical inference, Paris, October 2015.

Invited talk Journées STAR, A general procedure to combine estimators, Rennes, October 2015.

Seminar of University of Torino, Determinantal point process models and statistical inference, Turin, Italy, October 2015.

Contributed talk at "Spatial Statistics: Emerging Patterns" conference, Combining estimators in spatial statistics, Avignon, June 2015.

Invited talk at "Geometric Science of Information" (GSI'15), A two-color interacting random balls model for co-localization analysis of proteins (with C. Kervrann), Palaiseau, October 2015.

10.1.5. Scientific expertise

Charles Kervrann:

Member of the IEEE BISP "Biomedical Image and Signal Processing" committee.

Member of executive board of the GdR MIV (2588 - Microscopie Fonctionnelle du Vivant) CNRS.

Member of the scientific committee of the Interdisciplinary MiFoBio School CNRS (http://www.mifobio.fr).

Patrick Bouthemy:

Member of the board of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes).

Member of the board of the GRETSI (Groupement de Recherche en Traitement du Signal et des Images).

Member of the Research Committee of Telecom Bretagne.

Frédéric Lavancier:

Elected member of CNU section 26.

Expert for the project evaluation in the framework of FNRS (Fonds de la Recherche Scientifique), Belgium.

10.1.6. Research administration

Charles Kervrann:

Member of the executive board of the project committee of the Inria Rennes - Bretagne Atlantique centre.

Member of the Scientific Council of the INRA Rennes Research Centre.

Co-head of the "BioImage Informatics" node (ANR France-BioImaging project, National Infrastructure en Biologie et Santé).

Patrick Bouthemy:

Head of Excellence Lab CominLabs since April 2014.

Deputy member of the board of directors and member of the Selection and Validation Committee of the Images & Réseaux competitivity cluster.

Deputy member of the board of directors of IRT (Technological Research Institute) b<>com.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Charles Kervrann:

Master: From BioImage Processing to BioImage Informatics, 5 hours, coordinator of the module (30 hours), Master 2 Research IRIV, Telecom-Physique Strasbourg & University of Strasbourg.

Master: Geometric Modeling for Shapes and Images, 6 hours, Master 2 Research SISEA, University of Rennes 1.

Engineer Degree and Master 2 Statistics and Mathematics: Statistical Models and Image Analysis, 37 hours + 15 hours (TP, Hoai Nam Nguyen), 3rd year, Ecole Nationale de la Statistique et de l'Analyse de l'Information (ENSAI), Rennes.

Patrick Bouthemy:

Master: Analysis of Image Sequences, 18 hours, Master 2 Research SISEA, ISTIC & University of Rennes 1.

Master: Video Indexing, 9 hours, Master 2 Research Computer Science, ISTIC & University of Rennes 1.

Engineer Degree and Master 2 Research IRIV: Motion Analysis, 12 hours, Telecom-Physique Strasbourg & University of Strasbourg.

Frédéric Lavancier:

Master: Linear Models, 36 hours, Master 2 Mathematics & Engineering, option Statistics, University of Nantes.

Licence: Descriptive Statistics, 12 hours, Licence 3 Mathematics & Economy, University of Nantes.

10.2.2. Supervision

PhD: Christophe Biscio, Contribution to the modeling and the parametric estimation of determinantal point processes, University of Nantes, September 2015, supervised by Frédéric Lavancier.

PhD: Antoine Basset, Detection and characterization of dynamical events recognition in image sequences: application to membrane fusion in TIRF microscopy, University of Rennes 1, December 2015, supervised by Patrick Bouthemy and Charles Kervrann in collaboration with Jérôme Boulanger and Jean Salamero (UMR 144 CNRS-Institut Curie).

PhD in progress: Hoai Nam Nguyen, Methods and algorithms for tissue microarrays image analysis, started in October 2013, supervised by Charles Kervrann and Vincent Paveau (Innopsys).

PhD in progress: Vincent Briane, Statistical methods and models for motion analysis in microscopy, started in October 2014, supervised by Charles Kervrann and Myriam Vimond (ENSAI-CREST).

PhD in progress: Bertha Mayela Toledo Acosta, Methods and algorithms for 3D image registration and correlative microscopy, started in October 2014, supervised by Patrick Bouthemy and Charles Kervrann.

PhD in progress: Emmanuel Moebel, New strategies for the nonambiguous identification and enumeration of macromolecules in cryo-electron tomograms, started in November 2015, supervised by Charles Kervrann.

PhD in progress: Juan Manuel Perez Rua, Semantically meaningful motion descriptors for video understanding, started in January 2015, supervised by Patrick Bouthemy in collaboration with Tomas Crivelli and Patrick Pérez (Technicolor).

10.2.3. Juries

Referee of Habilitation thesis: S. Jonic (University of Pierre and Marie Curie) [C. Kervrann].

Referee of PhD thesis: X. Wang (Ecole Centrale de Lyon, supervised by L. Chen) [P. Bouthemy].

Chair of PhD thesis juries: Y. Karpate (University of Rennes 1, supervised by C. Barillot) [P. Bouthemy], H. Mi (University of Rouen, supervised by S. Ruan) [P. Bouthemy].

VIRTUAL PLANTS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Christophe Godin was Session chair and organizer of the e-session "from plant cells to plant fields" (http://cs-dc-15.org/e-tracks/organisms) at the World e-Conference on Complex Systems, Tempe Arizona, Sept 30 - Oct 1 2015, and was a session chair at the International Conference on Arabidopsis Research (ICAR), Paris, France 5-9 July;

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Christophe Godin is a member of the FSPM International Conference Board.
- Frédéric Boudon was member of the program committee of the Xe ISHS International Symposium on modelling in Fruit Research and Orchard Management.
- Yann Guédon was member of the program committee of the 47m`e journées de statistique de la SFdS.
- S. Cohen-Boulakia has been members of the following program committees: ACM SIGMOD conf 2015, 2016, IEEE Int. Conf. on Data Engineering (ICDE) 2015, BPM 2015 (Business Process Management, ICDT workshop on Algorithms and Systems for MapReduce and Beyond (BeyondMR) 2015.

9.1.2.2. Reviewer

- Frédéric Boudon was referee for papers submitted to the SIGGRAPH and Eurographics conferences and of the Journée Francaise d'Informatique Graphique (AFIG).

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Christophe Godin is an associate editor of the Journal Frontiers in Plant Science.
- S. Cohen-Boulakia is member of the editorial board of the Journal of Data Semantics (Springer).

9.1.3.2. Reviewer - Reviewing activities

- Christophe Godin was referee for papers submitted to Frontiers in Plant Science
- Frédéric Boudon was referee for papers submitted to Computer Graphics Forum, Computer and Electronics in Agriculture, Sensors, Remote Sensing and Environment, Robotics and Autonomous Systems.
- Yann Guédon was referee for papers submitted to Computational Intelligence and Neuroscience, Frontiers in Plant Science and PLoS ONE.
- Christian Fournier was referee for papers submitted to Computer and Electronics in Agriculture

9.1.4. Invited talks

- C. Godin gave invited talks at: "CompSysBio: Advanced lecture course on computational systems biology", Aussois, France (April); Embo Practical Course on "In vivo Plant Imaging" Heidelberg, Germany (March); International Conference on Arabidopsis Research (ICAR);

- S. Cohen-Boulakia gave invited tutorials at the « DigiCosme Spring School 2015 on Data Management » (Saclay, May 2015) and at the summer school « Cumulo-Numbio : Cloud computing for the life sciences » (Aussois, June 2015).
- C. Pradal gave an invited talk at the "Nimbios Morphological Plant Models Workshop" (Knoxvile, Tennessee, USA, September 2015) and at the "8th plenary meeting of the European TTO Circle" during the Expo Milan 2015 (Milano, Italy, June 2015).

9.1.5. Scientific expertise

- Christophe Godin was the external member of the mentoring and review committee of James Locke's group at the Sainsbury Laboratory, University of Cambridge. He is also a member of the Scientific Committee of INRA Environment/Agronomy department. Christophe Godin also participated in a concours for several CR2 positions at INRA, a concours of Professor in computer science at the University of Montpellier, to 2 thesis committee, to 2 PhD defences (1 as Jury president) and 2 HDR defences as a reviewer.
- Christophe Pradal is a member of the INRA expert scientific commissions (CSS Ecophysiologie, génétique et biologie intégrative des plantes) that assesses INRA individual researcher activities. He is also a member of the HCERES expert scientific commissions that assesses national research organisations.
- Christian Fournier is a member of of the INRA engineer evaluation commission (CEI Méthodes Pour la Recherche : Biologie végétale / Domaine Informatique, bio-informatique, statistiques et calcul scientifique) that assesses INRA individual engineer activities.

9.1.6. Research administration

- Christophe Godin is a member of the "bureau of commité des projets" at Inria Sophia-Antipolis Méditerrannée research center. He is also a member of the Scientific board of the modeling axis of Labex NUMEV and a member of the direction board of the institut de biologie computationnelle de Montpellier (IBC) and the scientific co-coordinator with Patrick Lemaire of IBC 4th reseach axis on imaging and omics data.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master in Life Sciences "IMaLis" of ENS Paris. Christophe Godin co-organizes with Patrick Lemaire of a 35 hours module on Plant and animal morphogenesis.

Master Plant Ecophysiology, Christian Fournier, Introduction to architectural plant modelling, 4h, M1, Montpellier University

Master Computer Science: Frédéric Boudon (resp.), Christophe Godin, Christophe Pradal, Benjamin Gilles [ICAR, LIRMM] and David Vanderhaege and Loïc Barthe [IRIT, Toulouse], Computer graphics, 45h, M2, University Montpellier, France.

Master Biostatistics : University Montpellier.
Yann Guédon teaches the stochastic modeling course (http://www.agro-montpellier.fr/um2/um1/masterbiostatistique). This involves 21h of M2 classes.

Master of bioinformatic and biomathematics (University Cheikh AntaDiop, Dakar, Sénégal). Christophe Godin and Yann Guédon participated to the module iPlant (M2 - 12h).

Master of Biology Fonctionnelle. Christophe Godin gave a class of Master 2 on 'Phyllotaxis' in the at the University of Montpellier 2 (M2 - 4h).

Engineering Degree: SupAgro Montpellier. Christophe Pradal and Christian Fournier. "Introduction to modelling" (1st year, 12h).

9.2.2. Supervision

- PhD : Léo Guignard, *"Segmentation, visualization and mechanical modeling of embryonic development in the ascidian"*, Montpellier University, 9 Dec. 2015, C. Godin, P. Lemaire.
- PhD : Guillaume Garin, *"Développement d'un cadre générique de modélisation du couple plante – agent pathogène dans OpenAlea et d'une méthodologie de transfert vers un Outil d'Aide à la Décision"*, 11 Dec. 2015, ANRT Ciffre ITK, C. Robert, B. Andrieu, C. Pradal, C. Fournier.
- PhD in progress : Jean-Philippe Bernard, *"Adaptive mechanical model of early flower development based on 4D imaging"*, Montpellier University, C. Godin, B. Gilles.
- PhD in progress : Beatriz Moreno Ortega, *"Analysis and modeling of metabolic and hormonal controls of lateral root growth during their ontogeny. Application to the impact of water stress on the root architecture"*, Montpellier SupAgro, B. Muller, Y. Guédon.
- PhD in progress : Sixtine Passot, *"Adaptation of millet root architecture : Phenotyping and spatio-temporal analysis of growing root systems"*, Montpellier University, L. Laplaze, Y. Guédon.
- PhD in progress : Severine Persello, *"Structural-Functional modeling of yield and fruit quality build-up of the mango, and integration of the effects of cultural practices"*, Montpellier University, F. Normand, I. Grechi, F. Boudon.
- PhD in progress : Marc Labadie, *"Study of the alternation between vegetative and floral development in strawberry: spatio-temporal architecture and analysis of key flowering genes"*, Bordeaux University, Béatrice Denoyes, Y. Guédon.
- PhD in progress : Adama Ndour, *"Role of root architecture of pearl millet for tolerance to water stress"*, Montpellier University, L. Laplaze, M. Lucas, C. Pradal.

9.2.3. Juries

- S. Cohen-Boulakia has been reviewer and member of the defense committee for the two following PhD thesis: Francois Moreews (U. Rennes 1), Mouhamadou Ba (INSA Rennes)

9.3. Popularization

- Christophe Godin and Frédéric Boudon presented the Secret Code of Flowers in the context of an Inria initiative at the Science Festival in October.
- Christophe Godin gave several classes at Lycée Pompidou, Castelnau Le Lez, at Terminal level and gave a "Café-in" seminar on "Comment les plantes font-elles des mathématiques ?"

ARAMIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

S. Durrleman was co-chair of the 5th Workshop on "Mathematical Foundations of Computational Anatomy" held in Munich on October 5, 2015 in conjunction with the MICCAI conference.

F. De Vico Fallani was co-chair of the satellite on "Brain Networks" during the International School and Conference on Network Science (NETSCI15) in Zaragoza, Spain, 2015.

F. De Vico Fallani was co-chair of the satellite on "Graph Models in Neuroimaging " in conjuction with the annual conference Wavelets and Sparsity (SPIE), San Diego, US, 2015.

M. Chavez was co-chair of the Minisymposia “Graph analysis of functional brain networks: theory, applications and issues” during the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society that took place in Milano, Italy, 2015.

10.1.1.2. Member of the organizing committees

F. De Vico Fallani was technical member of the symposium on "Human brain connectomics " in conjuction with IEEE Global SIP conference, Orlando, US, 2015

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

O. Colliot was a member of program committe of the Workshop on Patch-based Techniques in Medical Imaging (Patch-MI) held in Munich in October 2015 in conjunction with the MICCAI conference.

10.1.2.2. Reviewer

O. Colliot acted as a reviewer for the annual meeting of the Organization for Human Brain Mapping (OHBM).

S. Durrleman acted as a reviewer for the conferences Information Processing in Medical Imaging (IPMI) and International Conference on Computer Vision (ICCV).

F. De Vico Fallani acted as a reviewer for the annual conference of the IEEE Engineering in Medical and Biology Society (EMBS).

10.1.3. Journal

10.1.3.1. Member of the editorial boards

O. Colliot is a member of the Editorial Board of Medical Image Analysis (Elsevier).

10.1.3.2. Reviewer - Reviewing activities

During the past year the members of the team acted as reviewers for numerous journals:

O. Colliot acted as a reviewer for NeuroImage, NeuroImage: Clinical, IEEE Trans Medical Imaging, Medical Image Analysis and Neurobiology of Aging.

S. Durrleman acted as a reviewer for NeuroImage, IEEE Trans Medical Imaging, Medical Image Analysis, IEEE Trans Pattern Analysis and Machine Intelligence, IEEE Trans Biomedical Engineering.

F. De Vico Fallani acted as a reviewer for NeuroImage, IEEE Trans Biomedical Engineering, IEEE Trans Neural Systems Rehabilitation Engineering, Brain Topography, Plos One, Human Brain Mapping, Nature Scientific Reports, Journal of neuroscience methods, PLos Computational Biology.

M. Chavez acted as a reviewer for the Imperial College Press and the following journals: PLoS Comput Biol; PLoS One; J. Neurosci Methods; Phil. Trans. R. Soc. B; J. R. Soc. Interface; Human Brain Mapping; IEEE Proceedings; Neurosci. Biobehav. Rev. and Clin Neurophys;

10.1.4. Invited talks

S. Durrleman was invited lecturer at:

- Erwin Schrodinger International Institute for Mathematical Physics in Vienna for the program "Infinite-dimensional Riemannian Geometry with Applications to Image Matching and Shape Analysis",
- First congress of the Trisomy 21 Research Society at the ICM in Paris,
- "Shape Symposium" in Délemont, Switzerland,
- Colloquium "Horizon-Math" of the Mathematical Fundation of Paris.

F. De Vico Fallani was invited lecturer at:

- Conference of the IEEE Engineering in Medicine and Biology Society", Milan, Italy
- Conference on Wavelets and Sparsity (SPIE), San Diego, US
- Workshop on computational methods in system neuroscience, Tenerfe, Spain
- Symposium on Magnetoencephalography, Lyon, France

M. Chavez was invited lecturer at:

- Seminario de Biofisica, Instituto de Fisica, Universidad de San Luis Potosi, Mexico (10/12/2015)
- Mediterranean School of Complex Networks, Salina, Italy (09/2015)
- Satellite Physics of Multiplex Networks, International School and Conference on Network Science (NetSci15), Zaragoza, Spain, (06/2015).
- Scientific sessions of the Centro de Tecnologia Biomédica (CTB), Madrid, Spain, (05/2015)

10.1.5. Scientific expertise

O. Colliot acted as an expert for the HCERES (Haut-Conseil de l'Evaluation de la Recherche et de l'Enseignement Supérieur).

F. De Vico Fallani acted as an expert for the NIH-NSF CRCNS program, US; the Research Foundation (FWO), Flanders; the Organization for research (NWO), Netherlands.

M. Chavez acted as an expert for the Fond National Suisse de la Recherche Scientifique.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Olivier Colliot coordinates the module "Méthodes d'imagerie médicale" of the Master 2 in Computer Science of Université Pierre et Marie Curie.

Master: Olivier Colliot, Master in Computer Science, 4.5 hours (eqTD), Université Pierre et Marie Curie

Master: Stanley Durrleman, Master in Computer Science, 9 hours (eqTD), Université Pierre et Marie Curie

Master: Olivier Colliot, Master in Cognitive Science, 4.5 hours (eqTD), Ecole Normale Supérieure (Ulm)

Master: Stanley Durrleman, Master in Applied Mathematics, 2 hours (eqTD), Ecole Normale Supérieure (Cachan)

Master: Marie Chupin, Master in Computer Science, 3 hours (eqTD), Université Pierre et Marie Curie

Master: Dominique Hasboun, Master in Biology, 4 hours, Ecole Normale Supérieure (Ulm)

Master: Dominique Hasboun, Master in Cognitive Science, 12 hours, Ecole Normale Supérieure (Ulm)

Master: Dominique Hasboun, Master in Biology, 15 hours, Université Pierre et Marie Curie

Master: Dominique Hasboun, Master in Medical Physics, 7 hours, Université Paris-Sud

Master: Fabrizio De Vico Fallani, Master in "Méthodologies et applications en imagerie médicale", 3 hours (eqTD), Université Pierre et Marie Curie

Master: Damien Galanaud, Master in Medical Physics, 4 hours, Université Paris-Sud

Engineering school: Olivier Colliot, 4.5 hours (eqTD), Telecom ParisTech

Engineering school: Dominique Hasboun, 3 hours, ENSEA

Medical school: Didier Dormont is the Director of the University Diploma (DIU) “Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Medical school: Didier Dormont, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Dominique Hasboun, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Damien Galanaud, Courses for Medical Students, Université Pierre et Marie Curie

Medical school: Didier Dormont organizes and participates in the practical teaching of Neuroradiology for Medical Students in the Department of Diagnostic Neuroradiology of Pitié Salpêtrière University Hospital

Medical school: Didier Dormont organizes and participates in the practical teaching of Neuroradiology for Radiology Specializing Residents in the Department of Diagnostic Neuroradiology of Pitié Salpêtrière University Hospital

Medical school: Didier Dormont, Courses to the university diplomas (DU) : "Maladie d’Alzheimer", and "Imagerie Vasculaire non Invasive"

Medical school: Damien Galanaud, courses to the University Diploma (DIU) “Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Medical school: Dominique Hasboun, courses to the University Diploma (DIU) “Diagnostic and Therapeutic Neuroradiology", Université Pierre et Marie Curie

Paramedical studies: Dominique Hasboun, Psychomotricity, 50 hours, Université Pierre et Marie Curie

10.2.2. Supervision

Post-doc in progress : Xavier Navarro, “Analyse des interactions entre les activités corticales et la respiration”, UPMC, started in 2014, advisor: Mario Chavez

PhD in progress : “Catalina Obando-Forero, Graph models of cortical plasticity in temporal brain networks”, Inria, started in 2015, advisor: Fabrizio De Vico Fallani

PhD in progress : Jeremy Guillon, “Méthode d’analyse multimodale de connectivités neuronales basée sur la théorie des réseaux complexes multicouches”, EDITE Université Pierre et Marie Curie, started in 2015, advisors: Fabrizio De Vico Fallani and Mario Chavez

PhD in progress : Wen Junhao, “Cortical morphometry for discovering new biomarkers of neurodegenerative diseases”, Université Pierre et Marie Curie, Started in 2015, advisors: Olivier Colliot and Stanley Durrleman

PhD in progress : Jorge Samper-Gonzalez, “Learning from heterogeneous data for prediction of Alzheimer’s disease”, Université Pierre et Marie Curie, Started in 2015, advisors: Olivier Colliot and Theodoros Evgeniou

PhD in progress : Alexandre Routier, “Multimodal neuroimaging for characterization of primary progressive aphasias”, Université Pierre et Marie Curie, Started in 2015, advisors: Marc Teichmann, Olivier Colliot and Marie-Odile Habert

PhD in progress: Jean-Baptiste Schiratti, “Méthodes et algorithmes pour l’analyse statistique de données anatomiques longitudinales – application à la caractérisation des phases pré-symptomatiques des maladies neurodégénératives”, Ecole Polytechnique, Started in 2013, advisors: S. Allassonnière and S. Durrleman

PhD in progress: Barbara Gris, “Approche modulaire des méthodes de grandes déformations pour l’appariement de formes”, Ecole Normale Supérieure de Cachan, Started 2013, advisors: A. Trouvé and S. Durrleman

Engineer: Fanny Grosslin, “Implementation of a Brain Computer Interface for the MEG platform”, ICM, started in January 2015, advisor: Mario Chavez

Master 2: Francois Deloche, “Sparse estimation of Granger-causality with MVAR models”, Ecole Polytechnique, Mar-Aug 2015, advisor: Fabrizio De Vico Fallani and Stephanie Allassoniere

Master 2: Jorge Samper-Gonzalez, Master in data mining and knowledge management – Erasmus Mundus, Mar-Sept 2015, advisor: Olivier Colliot

Master 2: Alexandre Pron, Master in BioMedical Engineering – ParisTech Université Paris Descartes, Mar-Sept 2015, advisor: Marie Chupin

Summer internship: Daniela Ganelin, Massachussets Insitute of Technology, June-Aug 2015, advisor: Olivier Colliot

Summer internship: Regis Pierrard, Supelec, July-Aug 2015, advisor: Olivier Colliot

10.2.3. Juries

Olivier Colliot participated, as referee, to the PhD committee of Yogesh Karpate (Inria Rennes), 2015 (supervisors: Christian Barillot and Olivier Commowick).

Olivier Colliot participated, as examiner, to the PhD committee of Claudia Cioli (Université Pierre et Marie Curie), 2015 (supervisor: Yves Burnod and Habib Benali).

Marie Chupin participated, as examiner, to the PhD committee of Elise Blandin (Université Pierre et Marie Curie), 2015 (supervisor: Philip Gorwood).

Marie Chupin participated, as examiner, to the PhD committee of Quentin Duché (Université de Rennes 1), 2015 (supervisor: Hervé Saint-James, Oscar Acosta, Olivier Salvado).

Fabrizio De Vico Fallani participated, as referee, to the PhD committee of Yoann Isaac (Univ. Paris Sud), 2015 (supervisors: Michele Sebag).

10.3. Popularization

Fabrizio De Vico Fallani was interviewed for the French TV program “Zone Interdite” (M6) about the project on Brain Computer Interfaces. The video of the interview is available at https://www.youtube.com/watch?v=BmGiaPG9cnA

ASCLEPIOS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- **X. Pennec** was general chair of the Mathematical Foundations of Computational Anatomy (MFCA 2015) workshop, which was held in conjunction with MICCAI at Munich, Germany, on October 9, 2015.

9.1.1.2. Member of organizing committees

- **M. Sermesant** was a co-chair of the MICCAI 2015 Workshop Statistical Atlases and Computational Models of the Heart (STACOM 2015), which was held in Munich, Germany, on October 9, 2015.

9.1.2. Scientific events selection

9.1.2.1. Member of conference program committees

- **X. Pennec** was area chair of the International Symposium on Biomedical Imaging (ISBI 2015, New-York, NY, USA), and program committee member of the conference Geometric Sciences of Information (GSI'2015, Palaiseau, France).
- **H. Delingette** was program committee member of the conference on Medical Image Computing and Computer Assisted Intervention(MICCAI 2015), the FIMH 2015 conference, and the conference on Virtual Reality Interactions and Physical Simulation (VRIPHYS'15). He was an associate editor for the conference IEEE EMBC 2015.

9.1.2.2. Reviewer

- **H. Delingette** was a reviewer for the International Symposium on Biomedical Imaging (ISBI'15), the international conference on computer-aided interventions (IPCAI'15) the conference on Virtual Reality Interactions and Physical Simulation (VRIPHYS'15), the conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2015), the International Conference on Computer Vision (ICCV 2015), the International Conference on Computer Vision and Pattern Recognition (CVPR 2015).
- **M. Sermesant** was a reviewer for the MICCAI 2015 and FIMH 2015 conferences.
- **X. Pennec** was a reviewer for the 24th biennial international conference on Information Processing in Medical Imaging (IPMI 2015) and the conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2015).

9.1.3. Journal

9.1.3.1. Member of editorial boards

- **N. Ayache** is the co-founder and the Co-Editor in Chief with J. Duncan (Professor at Yale) of *Medical Image Analysis*[0]. This scientific journal was created in 1996 and is published by Elsevier.
- **N. Ayache** is Associated Editor of *IEEE Transactions on Medical Imaging*[0] and a member of the editorial board of the following journals: *Medical Image Technology* (Japanese journal) and *Journal of Computer Assisted Surgery* (Wiley).
- **H. Delingette** is a member of the editorial board of the journal *Medical Image Analysis* (Elsevier).
- **I. Strobant** is editorial coordinator for *Medical Image Analysis*, Elsevier (since october 2001) and editorial assistant for *IEEE Transactions on Medical Image Analysis* (since october 2001).
- **X. Pennec** is a member of the editorial board of the journal *Medical Image Analysis* (Elsevier), of the *International Journal of Computer Vision* (Springer), of the SIAM *Journal on Imaging Sciences (SIIMS)*, and of the *Journal of Mathematical Imaging and Vision (JMIV)*.

[0] http://www.elsevier.com/wps/find/journaleditorialboard.cws_home/620983/editorialboard
[0] http://www.ieee-tmi.org/

9.1.3.2. Reviewer - Reviewing activities

- **H. Delingette** was a reviewer for the following journals : *Medical Image Analysis* (Elsevier), IEEE Transactions in Medical Imaging, IEEE Transactions in Biomedical Engineering, Computer Vision and Image Understanding, Biomedical Engineering, Computers in Biology and Medicine and Journal of Fluids and Structures.
- **X. Pennec** was a reviewer for the following journals : Medical Image Analysis (MedIA), IEEE Transactions in Medical Imaging (TMI), NeuroImage (NIMG), IEEE Transactions on Pattern Analysis (PAMI), International Journal of Computer Vision (IJCV), Journal of mathematical imaging and vision (IJCV), SIAM journal on Imaging Sciences (SIIMS) and International Statistical Review (ISR).
- **M. Sermesant** was a reviewer for the following journals: Journal of the American College of Cardiology, IEEE Transactions on Medical Imaging, IEEE Transactions on Biomedical Engineering, Medical Image Analysis and Computers in Biology and Medecine.

9.1.4. Invited talks

- **Nicholas Ayache** gave the following invited lectures:
  - Symposium "Les savoirs de l'ENS", Ecole Normale Supérieure, Paris 2015.
  - First conference CYBERMED, Juan-les-Pins, 2015.
  - Forum Chili-France, La société intelligente, Paris 2015.
  - Conference ENIT organized by the Collège de France in Tunisia, Tunis, 2015.
  - Journées françaises des doubles cursus, Paris 2015.
  - Institut du cerveau et de la moelle épinière, Hôpital de la Pitié Salpêtrière, Paris 2015.
  - Keynote at the Multidisciplinary Computational Anatomy Initiative, Fukuoka, Japan 2015.
- **Hervé Delingette** gave the following invited lectures at the:
  - IHU Strasbourg Scientific Day on June 3rd in Strasbourg.
  - Biomed Summer School in Paris in July 2015.
  - Metice workshop in Bordeaux in September 2015.
- **Xavier Pennec** gave the following invited lectures:
  - Schrödinger institute Programme on Infinite-Dimensional Riemannian Geometry with Applications to Image Matching and Shape Analysis, Vienna, February 2015: a one week course and one workshop presentation.
  - 2015 Joint Mathematics Meetings (AMS/MAA): AMS Special Session on Differential Geometry and Statistics, San Antonio, Texas, January 2015.
  - Center for Health Sciences, SRI international, Menlo Park, USA, June 4 2015.
  - Statistics Department Seminar, Stanford University, April 21, 2015.
- **Maxime Sermesant** gave an invited lecture at Computing in Cardiology Conference, in Nice September 2015.

9.1.5. Leadership within the scientific community

- **Xavier Pennec** is a member of the MICCAI Society Board of Directors from 2012 to 2015.
- **Nicholas Ayache** is a member of the French Academy of Sciences in the section of Mechanics and Informatics.

9.1.6. Scientific expertise

- **Nicholas Ayache** was invited in Tokyo, Japan in February 2015 to evaluate a national program on the "Multidisciplinary Computational Anatomy Initiative" funded by the MEXT.

- **Xavier Pennec** was a member of the Member of the panel for the joint FLAG-ERA Joint / HBM flagship Transnational Call (JTC), 2015.
- **H. Delingette** was an evaluator for the ECOS Sud France-Chili program. He was involved in the redaction of the second application of the Unversité Côte d'Azur to the IDEX bid.
- **M. Sermesant** is a member of the Medical Simulation Working Group of Aviesan. He organized two hackfests for the medInria software.

9.1.7. Research administration

- **Nicholas Ayache** has been a member of the "Comité de la Recherche Biomédicale en Santé Publique (CRBSP)" of the Nice hospitals since 2008. He has been a member of the Research Council of the "Fondation pour la Recherche Médicale (FRM)" since January 2015.
- **Xavier Pennec** is a member of the Doctoral follow-up Committee (CSD) at Inria Sophia Antipolis and in charge of the relationships of Inria-Sophia with the Nice University Hospital (CHU).
- **H. Delingette** is a member of the local committee in charge of the scientific selection of visiting scientists (Comité NICE) and the local committee on the immersive platform.
- **M. Sermesant** is a member of the local committee in charge of the selection of funding for courses and conferences organisation and of the local organisation for scientific presentations in high schools.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : H. Delingette and X. Pennec, Introduction to Medical Image Analysis, 21h course (28.5 ETD), Master 2 MVA, ENS Cachan, France

Master : H. Delingette and X. Pennec, Advanced medical Imaging, 21h course (28.5 ETD), Master 2 MVA and École Centrale de Paris, France

Master : H. Delingette and X. Pennec, Computational Anatomy and Physiology, 21h course (28.5 ETD), Master CBB - Computational Biology and Biomedicine, Univ. Nice-Sophia Antipolis.

Master : M. Sermesant, Computational Anatomy and Physiology, 3h course (4.5 ETD), Master CBB - Computational Biology and Biomedicine, Univ. Nice-Sophia Antipolis.

9.2.2. PhD defended

Vikash Gupta, *Diffusion tensor imaging of the brain: towards quantitative clinical tools*, Nice Sophia Antipolis University, March 2015.[5]

Thomas Benseghir, *3D/2D Coronary Registration for Interventional Cardiology Guidance*, Nice Sophia Antipolis University, July 2015.[2]

Rocio Cabrera Lozoya, *Radio frequency ablation planning for cardiac arrhythmia treatment through biophysical modelling and machine learning approaches*, Nice Sophia Antipolis University, September 2015.[3]

Chloé Audigier, *Modeling radio-frequency ablation for the planning of abdominal tumors resection*, Nice Sophia Antipolis University, October 2015.[1]

Loic Le Folgoc, *Biophysical Personalization of Cardiac Models based on Machine Learning*, Nice Sophia Antipolis University, November 2015.[6]

Nicolas Cordier, *Simulation and Analysis and Simulation of Brain Tumors Images*, Nice Sophia Antipolis University, December 2015.[4]

Jan Margeta, *Indexation of time-series 4D cardiac MR images*, Ecole des Mines de Paris, December 2015.[7]

9.2.3. PhD in progress

Pietro Gori , *Statistics on the brain connectivity of patients with neurological diseases*, University of Paris. Started in 2012. Thesis in collaboration with the Aramis project-team, co-directed by O. Colliot, S. Durrleman and N. Ayache. Defended on January 8, 2016.

Mehdi Hadj-Hamou, *Biophysical modeling of the anatomical evolution of the brain*, Nice Sophia Antipolis University. Started in September 2012. Co-directed by N. Ayache and X. Pennec.

Bishesh Khanal, *Modeling the atrophy of the brain in Alzheimer's disease*, Nice Sophia Antipolis University. Started in November 2012. Co-directed by X. Pennec and N. Ayache.

Nina Miolane, *Geometric Statistics in Computational Anatomy: Template Estimation and Subspace Learning in Manifolds, Lie groups and Stratified Spaces*, Nice-Sophia Antipolis University. Started in November 2013. Directed by X. Pennec.

Anant Vemuri, *Augmented reality for image-guidedsurgery*, Nice Sophia Antipolis University. Started in 2012. Co-directed by S. Nicolau and N. Ayache.

Marc-Michel Rohé, *Analyse statistique spatio-temporelle des formes, déformations, flots et propriétés physiologiques du cœur*, Nice Sophia Antipolis University. Started in 2014. Co-directed by X. Pennec and M. Sermesant.

Sophie Giffard-Roisin, *Non-invasive Estimation of Cardiac Electrophysiological Parameters*, Nice Sophia Antipolis University. Started in 2014. Co-directed by N. Ayache and M. Sermesant.

Roch Molléro, *Uncertainty quantification in personalized electromechanical models. Application to cardiomyopathies and obesity*, Nice Sophia Antipolis University. Started in 2014. Co-directed by N. Ayache and M. Sermesant.

Thomas Demarcy, *Segmentation and anatomic variability of the cochlea and other temporal bone structures from medical images*, Nice Sophia Antipolis University. Started in 2014. Directed by H. Delingette.

Loïc Devilliers, *Consistency of statistics on infinite dimensional orbifolds – Applications to computational anatomy*, Nice Sophia Antipolis University. Started in October 2015. Co-directed by X Pennec and St. Allassonière.

Raphaël Sivera, *Analyse statistique de l'évolution de structures morphologiques partir de séquences temporelles d'IRM*, Nice Sophia Antipolis University. Started in October 2015. Co-directed by N. Ayache and H. Delingette.

Pawel Mlynarski, *Tumor segmentation based on Random Forests and Convolutional Neural Networks trained on partially annotaded data*, Nice Sophia Antipolis University. Started in December 2015. Co-directed by N. Ayache and H. Delingette.

9.2.4. Juries

N. Ayache was co-supervisor of the PhD theses of Vikash Gupta (U. of Nice Sophia Antipolis), Rocío Cabrera Lozoya (U. of Nice Sophia Antipolis), Chloé Audigier (U. of Nice Sophia Antipolis), Loic Le Folgoc (U. of Nice Sophia Antipolis), Nicolas Cordier (U. of Nice Sophia Antipolis) and Jan Margeta (Ecole des Mines de Paris).

Hervé Delingette was co-supervisor of the PhD theses of Chloé Audigier (U. of Nice Sophia Antipolis), Loic Le Folgoc (U. of Nice Sophia Antipolis) and Nicolas Cordier (U. of Nice Sophia Antipolis). He was a reviewer in the PhD thesis committee of Vasyl Mykhalchuk (U. of Strasburg) and of Romane Gauriau (Telecome ParisTech). He was a member of the PhD thesis committee of Alexandre Abraham (U. of Paris-Saclay) and Jan Margeta (Ecole des Mines de Paris).

Xavier Pennec was examinor of the HDR of Laurence Rouet (U. Paris-Descartes) and of the PhD thesis committee of Thomas Benseghir (U. of Nice Sophia Antipolis). He was co-supervisor of the PhD thesis of Vikash Gupta (U. of Nice Sophia Antipolis).

Maxime Sermesant was co-supervisor of the PhD thesis of R. Cabrera Lozoya (U. of Nice Sophia Antipolis).

9.3. Popularization

Maxime Sermesant gave a presentations about research and medical imaging at Lycée Bristol in Cannes.

ATHENA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- R. Deriche is Adj. Director at the Doctoral School EDSTIC (Website: http://edstic.i3s.unice.fr/index.html)
- T. Papadopoulo (since september 2011) is the coordinator of the Master of Science in Computational Biology and Biomedicine from University of Nice Sophia Antipolis (Website: http://cbb.unice.fr). The scientific goal of this program is to focus on the human being from different perspectives (understanding and modeling functional aspects or interpreting biomedical signals from various devices) and at different scales (from molecules to organs and the whole organism).

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- R. Deriche is member of the conference Programme Committee (PC) of the International Symposium on Biomedical Imaging (ISBI), member of the PC of MICCAI 2015 Workshop on Computational Diffusion MRI and member of the PC of MFCA 2015 5th MICCAI workshop on Mathematical Foundations of Computational Anatomy.
- D. Wassermann is member of the conference Program Committee (PC) of Medical Image Computing and Computed Assisted Intervention (MICCAI 2015), and Information Processing in Medical Imaging (IPMI 2015).
- M. Clerc is a member of the Program Committee of BaCI 2015, and a member of the Scientific Committee of the Sophia Antipolis Colloquium.
- T. Papadopoulo is member of the PC of GRETSI 2015 and of MICCAI 2015 Workshop on Computational Diffusion MRI.

9.1.2.2. Reviewer

- R. Deriche serves several international conferences (Isbi, MICCAI, ISMRM..) and international workshops (CD-MRI Miccai, MFCA Miccai..)
- D. Wassermann serves several international conferences (ISBI, MICCAI, IPMI, ...) and international workshops (CD-MRI Miccai, ..)
- T. Papadopoulo served the international conferences: (ICIP, ISBI, EUSIPCO. NER, VISAPP).

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- R. Deriche is member of the Editorial Board of the Journal of Neural Engineering, Associate Editor of SIAM Journal on Imaging Sciences (SIIMS), editorial board member at Springer for the book series entitled Computational Imaging and Vision and member of the Editorial Board of the Medical Image Analysis Journal
- M. Clerc is member of the Editorial Board of Biomedical Engineering OnLine, and of the ISTE-Wiley book series.

9.1.3.2. Reviewer - Reviewing activities

- R. Deriche serves several international journals (NeuroImage, IEEE Transactions on Medical Imaging, Magnetic Resonance in Medicine, Journal of Mathematical Imaging and Vision, Medical Image Analysis Journal,...).
- D. Wassermann serves several international journals (NeuroImage, IEEE Transactions on Medical Imaging, Human Brain Mapping, Medical Image Analysis Journal,...).
- T. Papadopoulo serves several international journals (IEEE Transactions on Biomedical Engineering, Frontiers Neuroscience, Transactions on Neural Systems & Rehabilitation Engineering, International Journal on Computer Vision,...).

9.1.4. Invited talks

- R. Deriche gave an invited talk at USTHB on September 20th, 2015.
- D. Wassermann gave the following invited talks:
  - MedICSS Summer School, London, UK, 2015: Gaussian Processes: Sound Bases for Stochasticity in Medical Imaging
  - Microbiology Department, University of Buenos Aires, Argentina, 2015: Diffusion MRI-based microscopy, applications to Neuroscience
  - ICM, Paris, France 2015: Automated in vivo dissection and microstructure-based tractography analyses of cerebral white matter structures
  - Universidad de Valladolid, Valladolid, Spain 2015: Automated in vivo dissection and microstructure-based tractography analyses of cerebral white matter structures
  - UCL, London, UK 2015: Automated in vivo dissection and microstructure-based tractography analyses of cerebral white matter structures
- M. Clerc gave the following invited talks:
  - TedX Cannes conference, March 2015.
  - Connected Health, Monaco, June 2015.
  - Keynote at EUSIPCO 2015 Conference, Nice, September 2015.
  - Invited talk at BaCI conference, Utrecht, September 2015.
  - ENS Lyon Colloquium, October 2015.
  - Horizon Maths (IBM Bois Colombes), December 2015.

9.1.5. Leadership within the scientific community

The Inria Project-Lab BCI-LIFT was created in 2015, to foster the work of 8 Inria teams and 2 more teams outside Inria on Brain Computer Interfaces Learning, Interaction, Feedback and Training. It is coordinated by Maureen Clerc.

BCI-LIFT was responsible for setting up a Brain Computer Interface Challenge which attracted 260 participants. The results of the Challenge were presented at the IEEE EMBS Conference on Neural Engineering in Montpellier, April 2015.

9.1.6. Scientific expertise

- R. Deriche serves several international journals (NeuroImage, IEEE Transactions on Medical Imaging, Magnetic Resonance in Medicine, Journal of Mathematical Imaging and Vision, Medical Image Analysis Journal,...).
- D. Wassermann serves as a reviewer for the following scientific funding institutions: French ANR, Dutch Organisation for Scientific Research, Argentine Agencia Nacional de Promocion Cientifica y Tecnologica.

9.1.7. Research administration

- R. Deriche is Chair of the 2015 and 2016 Inria Sophia Antipolis recruitment commitees

- R. Deriche is member of 4 Scientific Councils: University of Nice Sophia Antipolis, ITMO ITS (Institut des Technologies pour la Santé), Olea Medical Company (http://www.olea-medical.com/) and the GIS UNS-ENSL-CNRS-Inria.
- R. Deriche is member of the Administration Council of AFRIF (Association Française pour la Reconnaissance et l'Interprétation des Formes) and member of the Academic Council of UCA (Nice Côte d'Azur University)
- M. Clerc is Déléguée Scientifique Adjointe for the Inria Sophia Antipolis Research Center.
- M. Clerc is a member of the Evaluation Committee of Inria.
- M. Clerc is a member of the Commission Scientifique Interne of Inria.
- M. Clerc is a deputy member of the Administration Council of Université Côte d'Azur.
- M. Clerc was a member of the ENS Rennes Professor recruitment committee in 2015.
- M. Clerc was a member of the University of Nice, JAD laboratory Professor recruitment committe in 2015.
- T. Papadopoulo is a member of the Inria committee for software development.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master: R. Deriche, Variational approaches and Geometrical Flows for Computational Brain Imaging, 36 ETD, M2 "Computational Biology and Biomedicine", University of Nice Sophia Antipolis, France.
- Master: R. Deriche, Advanced Image Processing Techniques, 12 ETD, M1 International CBB & Ubinet, University of Nice Sophia Antipolis, France.
- Master: R. Deriche, Computational Image Processing, Analysis and Artificial Vision, 18 ETD, Institut Telecom / Telecom SudParis, Evry, France.
- Master: T. Papadopoulo, *3D Computer Vision*, 12 ETD, M1 International Ubinet, University of Nice Sophia Antipolis, France.
- Master: T. Papadopoulo, *Inverse Problems in Brain Functional Imaging*, 36 ETD, M2 "Computational Biology and Biomedicine", University of Nice Sophia Antipolis, France.
- Master: T. Papadopoulo, *Inverse problems for brain functional imaging*, 24 ETD, M2, Mathématiques, Vision et Apprentissage, ENS Cachan, France.

9.2.2. Supervision

- PhD defended April 14, 2015: Sebastian Hitziger, "MEEG signal processingn", started Nov. 2011, Supervisors: Théodore Papadopoulo & Maureen Clerc.
- PhD in progress: Rutger Fick, "Microstructure Recovery via dMRI", started Oct. 2013, Université Nice Sophia Antipolis. Supervisor: Rachid Deriche.
- PhD in progress: Kai Dang, "Modeling and characterizing electrical conductivity for cochlear implantation", started Dec. 2013, Université Nice Sophia Antipolis. Supervisor: Maureen Clerc.
- PhD in progress: Gabriel Girard, "fMRI & dMRI", started Sept. 2012, Supervisors: Rachid Deriche & Maxime Descoteaux (University of Sherbrooke, CA).
- PhD in progress: Mouloud Kachouane, "Invariants and biomarqueurs in dMRI", started Oct. 2012, Supervisors: Rachid Deriche & L. Boumghar (USTHB, Algiers).
- PhD in progress: Thinhinane Megherbi, "HARDI & High Order Tensors", started Sept. 2011, Supervisors: Rachid Deriche & L. Boumghar (USTHB, Algiers)
- PhD in progress: Marco Pizzolato, "Diffusion & Perfusion MRI: From bench to bedside" started Dec. 2013, Université Nice Sophia Antipolis. Supervisor: Rachid Deriche.

- PhD in progress: Brahim Belaoucha, “Using diffusion MR information to reconstruct networks of brain activations from MEG and EEG measurements”, Université Nice Sophia Antipolis, started Oct. 2013, Supervisor: Theo Papadopoulo.
- PhD in progress: Guillermo Gallardo Diez, “Connectivity-Based Brain Parcellation”, started Nov. 2015, Université Nice Sophia Antipolis. Supervisors: D. Wassermann/ R. Deriche
- PhD in progress: Nathalie Gayraud, “Structured Dictionary Learning”, University Nice Sophia Antipolis, started November 2015, supervisor: Maureen Clerc.
- Master: Guillermo Gallardo Diez, “Connectivity-Based Brain Parcellation”, Supervised by D. Wassermann.

9.2.3. Juries

- R. Deriche participated in the PhD jury of Jianfei Yang (Delft University, Eindhoven, Sept. 2015).
- M. Clerc participated in the PhD jury of Juliette Spinnato (Aix-Marseille Université, July 2015).
- M. Clerc participated in the PhD jury of Ronan Hamon (ENS Lyon, Oct. 2015).
- M. Clerc participated in the PhD jury of Alexandre Fouchard (CEA LETI, Nov. 2015).
- D. Wassermann participated in the PhD jury of Ariel Hernan Curiale (Universidad de Valladolid, Spain, June 2015).

9.3. Popularization

Maureen Clerc gave a conference at the TedX Cannes event in March 2015 (Youtube video link: https://youtu.be/z5AO-603AmE).

DEMAR Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events organisation

7.1.1.1. General chair, scientific chair

D. Guiraud is the conference chair of IEEE EMBS Neural Engineering Conference to be held in Montpellier in April 2015.

M. Hayashibe is Co-Chair of IEEE Technical Committee on Human Movement Understanding at Robotics and Automation Society with E. Demircan (Univ. of Tokyo), D. Kulic (Univ. of Waterloo) and D. Oetomo (Univ. of Melbourne). https://sites.google.com/site/ieeehmu/

7.1.1.2. Member of the organizing committees

D. Andreu is organizer of the working group on Control Architectures of Robots of the french GdR Robotique.

D. Andreu is co-organizer of the "action transversale inter-GdR" ALROB (Architectures Logicielles pour la ROBotique autonome et les systèmes adaptables)of the CNRS, implying the french GdR Robotique and GdR Génie de la Programmation et du Logiciel

7.1.2. Scientific events selection

All the team members are involved in reviewing articles for various conferences and journals both in engineering and biomedical fields.

7.1.2.1. Chair of conference program committees

D. Andreu has been Chair of Corporate Partnerships & Exhibits, IEEE EMBS Conference on Neural Engineering (NERÕ15)

C. Azevedo Coste was program chair of IEEE EMBS Neural Engineering Conference held in Montpellier in April 2015.

7.1.2.2. Member of the conference program committees

Daniel Simon was member of the RTNS'15 (Real Time Networks and Systems), ETFA'15 (Emerging Technologies and Factory Automation) and ICINCO'15 (International Conference on Informatics in Control, Automation and Robotics) int. conference program commitees.

Mitsuhiro Hayashibe was Associate Editor of IEEE ICRA'16 (International Conference on Robotics and Automation) in charge of handling reviews on 6 papers in Oct.2015.

7.1.2.3. Reviewer

Daniel Simon was reviewer for the CDC'15 (Ieee Conf. on Decision and Control).

7.1.3. Journal

7.1.3.1. Member of the editorial boards

M. Hayashibe is member of the Editorial Board of the International Journal of Advanced Robotic Systems, in Rehabilitation Robotics. M. Hayashibe is Guest Associate Editor, Frontiers in Neuroprosthetics, Biosig- nal processing and computational methods to enhance sensory motor neuroprosthetics, with David Guiraud, Dario Farina, and Jose L. Pons. http://journal.frontiersin.org/ResearchTopic/1639

C. Azevedo Coste is Associate Editor of Paladyn Journal Behavioral Robotics (Assistive robotics).

7.1.3.2. Reviewer - Reviewing activities

The members of the team reviewed numerous papers for numerous international conferences. Daniel Simon was reviewer for the 'Simulation: Transactions of the Society for Modeling and Simulation International' journal.

7.1.4. Invited talks

Daniel Simon gave talks about "real-time simulation of hybrid systems" at ALROB meeting (LIP6, december 7) and about "Feedback control and slacken real-time" at the Inria meeting on probabilistic scheduling (Paris, december 8).

Mitsuhiro Hayashibe was invited to give a talk about "Personalized Neuroprosthetics and Personalized Home Rehabilitation" at Faculty seminer, Portsmouth University, UK on 11th March 2015.

Mitsuhiro Hayashibe was invited to give a talk about "Personalized Neuroprosthetics - Evoked EMG based Muscle Activation Closed-loop Control in Electrical Stimulation" at ERC (European Research Council) DEMOVE Symposium on 12th June 2015 at University Medical Center Gottingen, Germany (Prof. Dario Farina) http://4th-demove-symposium.bccn.uni-goettingen.de/.

Mitsuhiro Hayashibe was invited to give a talk about Personalized Neuroprosthetics and Synergetic Learning Control" at 3rd Symposium on Embodied- Brain Systems Science, University of Tokyo, Japan on 21th August 2015.

Christine AZEVEDO COSTE was invited by CEFIPRA (India) to a workshop "Understanding and faciliation of neural plasticity for enhancing post stroke recovery" in New Delhi in October 2015.

Christine AZEVEDO COSTE was invited to give a presentation during the "Simpósio Internacional em Eletroestimulacão Aplicada a Tecnologia Assistiva" in Brasilia, Brazil in December 2015.

Christine AZEVEDO COSTE gave a talk during scientific seminar of the "Institut du Mouvement Humain et Cybernétique" (Montpellier, France) in November 2015 "Analyse, modélisation et assistance du mouvement".

Christine AZEVEDO COSTE gave a talk during "Journées scientifiques Inria", in June 2015 (Nancy, France) "Contrôle artificiel du mouvement humain : observer, interpréter, assister".

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Master : D. Andreu, Software engineering, real time OS, discrete event systems, networks, neuroprosthesis, 200h, master and engineers degrees, Polytech Montpellier, France;

Master: Christine Azevedo Coste, Ethics in bioengineering research, 3h, Master STIC pour la Sant, Univ. Montpellier 2, France;

Master: Mitsuhiro Hayashibe, Neuroprotheses I and II (module coordinator), EMG and EEG signal processing and other rehabilitation modeling issues, 12h, Master STIC pour la Sante, Univ. de Montpellier, France;

Christine AZEVEDO COSTE gave a lecture in December 2015 at University of Brasilia, "Functional Electro-stimulation (FES) and artificial control of Human Motion".

7.2.2. Supervision

HDR : Mitsuhiro Hayashibe, "Computational Modeling and Control for Personalized Neuroprosthetics and Rehabilitation", Oct. 12th 2015, Univ. de Montpellier

PhD : Yacine Berranen, "Modélisation volumique du muscle avec représentation des fonctions physiologiques", Dec. 2015, D. Guiraud, M. Hayashibe and B. Gilles

PhD : Mariam Abdallah, "Système d'acquisition de signaux bioélectriques multicanal, programmable et implantable", Dec. 2015, G. Cathébras and F. Soulier.

PhD in progress : Sijobert Benoît, Stimulation Electro-fonctionnelle pour l'assistance aux mouvements des membres inférieurs dans les situations de déficiences sensori-motrices , 01/12/2015, Christine Azevedo Coste, David Andreu

PhD in progress : Tigra Wafa, Assistance à la prehension par stimulation électrique fonctionnelle chez le patient tétraplégique,11/2013, Christine Azevedo Coste, David Guiraud

PhD in progress: Thomas Guiho, "Stimulation électrique médullaire en vue de la restauration des fonctions urinaires, intestinales et sexuelles chez le patient blessé médullaire", Sept. 2013, C. Azevedo and D. Guiraud.

PhD in progress: Ibrahim Merzoug, "Validation formelle pour les systèmes embarqués critiques", Oct. 2014, K. Godary and D. Andreu.

PhD in progress: Melissa Dali, "Modle d'interaction électrode-nerf et optimisation en vue d'améliorer la stimulation sélective", Oct. 2014, O. Rossel and D. Guiraud.

PhD in progress: Marion Vincent, "Précision et modélisation des effets de la stimulation électrique directe lors des opérations de chirugie éveillée des gliomes de bas-grade", Dec. 2013, F. Bonnetblanc and D. Guiraud.

Engineers : David Andreu supervises Baptiste Colombani. "HILECOP development". Computer engineering, Inria Expert Engineer (2 years contract, Inria).
David Andreu and David Guiraud supervise Milan Demarcq on "Implantable network design", Electronics, Engineer (1 year contract, Inria).
David Andreu and David Guiraud supervise Guillaume Souquet on "Design of implantable stimulator", Industrial Informatics Doctor, Research Engineer (1 year contract, Inria).
David Andreu supervises Arthur Hiairrassary on "Development of a stimulation real-time controller", Industrial Informatics Engineer, Research Engineer (2 years contract, UM).
David Andreu supervises Ronald Reboul on "Design of complex digital system". Electronics, Engineer (2 years contract, Inria).

7.2.3. Juries

Christine Azevedo Coste was member of the PhD thesis committee of Michelle RABELO, Universidade de Brasilia, "Confiabilidade das medidas de dinamometria isocinetica computorizada para movimentos do tronco em sobreviventes de acidente vascular enceflico com hemiparesia crnica.", december 2015

Christine Azevedo Coste was member of the phd thesis committee of Franssis BARBOSA DE OLIVEIRA, Universidade de Braslia, "Opes diagnosticas no monitoramento de neuropatias diabticas: em busca de parmetros para tomada de decises clinicas.", december 2015

D. Simon was reviewer and member of the PhD defense jury of Mohamed Ould Sass ("Le modèle BGW pour les systèmes temps réel surchargés", IRCCyN Nantes) and member of the jury for Mihaly Berekmeri ("Modeling and control of cloud services Application to MapReduce performance and dependability ",GIPSA-lab Grenoble).

Christine Azevedo Coste was reviewer of Nadia Khalfa Cheikh phd thesis "Ayant pour sujet : Détection de ruptures de signaux physiologiques en situation in vivo via la méthode FDpV : Cas de la fréquence cardiaque et de l'activité électrodermale de marathoniens" in september 2015 (UMPC Paris France / INSAT Tunis)

GALEN Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- Kokkinos, Iasonas: (i) Co-Organizer of From Image Statistics to Probabilistic Deep Learning in conjunction with ICCV 2015, (ii) Co-Organizer of Search and Planning for Inference and Learning (SPIL), in conjunction with CVPR 2015
- Paragios, Nikos: (i) Organizer of 3rd Biomedical Image Analysis Summer School : Modalities, Methodologies & Clinical Research

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committees

- Blaschko, Matthew: British Machine Vision Conference (BMVC)
- Kokkinos, Iasonas: IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- Paragios, Nikos: Medical Image Computing and Computer Assisted Intervention (MICCAI)

9.1.2.2. Member of the conference program committees

- Blaschko, Matthew: International Conference on Computer Vision (ICCV), Annual Conference on Neural Information Processing Systems (NIPS)
- Kokkinos, Iasonas: International Conference on Computer Vision (ICCV), Neural Information Processing Systems (NIPS), International Conference on Learning Representations (ICLR)

9.1.2.3. Reviewer

The members of the team reviewed numerous papers for several international conferences, such as for the annual conferences on Computer Vision and Pattern Recognition (CVPR), and Medical Image Computing and Computer Assisted Intervention (MICCAI)

9.1.3. Journal

9.1.3.1. Member of the editorial boards

- Paragios, Nikos: Medical Image Analysis Journal (MedIA), SIAM Journal on Imaging Sciences
- Kokkinos, Iasonas: Image and Vision Computing Journal (IVC), Computer Vision and Image Understanding Journal (CVIU).
- Kumar, Pawan: Computer Vision and Image Understanding Journal (CVIU).

9.1.3.2. Reviewer - Reviewing activities

- Blaschko, Matthew: IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI), Journal of Machine Learning Research (JMLR)
- Kokkinos, Iasonas: International Journal of Computer Vision, IEEE Transactions on Pattern Analysis and Machine Intelligence, Computer Vision and Image Understanding (CVIU)
- Ferrante, Enzo: IEEE Transactions on Medical Imaging (T-MI), Medical Image Analysis (MedIA), Computarized Medical Imaging and Graphics (CMIG)
- Zacharaki, Evangelia: IEEE Transactions on Medical Imaging (T-MI), Transactions on Biomedical Engineering
- Dokania, Puneet: Computer Vision and Image Understanding (CVIU)

9.1.4. Invited talks

- Paragios, Nikos: Hong Kong University of State and Technology, Chinese University of Hong Kong, Swiss Federal Institute of Technology in Zurich (ETHZ), Queen Mary University of London, Bayesian and Graphical Models in Biomedical Imaging (in conjunction with MICCAI), National Technical University of Athens

9.1.5. Scientific expertise

- Paragios, Nikos: (i) member of the Scientific Council of the SAFRAN Conglomerate, (ii) Member of the advisory board of the Data HealthCare Institute

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Masters

Blaschko, Matthew:

- Master: Neural Information Processing, Spring, Ecole CentraleSupelec Paris, FR

Kokkinos, Iasonas

- Master: Machine Learning for Computer Vision, 24, M2, Ecole Normale Superieure-Cachan, FR
- Master: Introduction to Deep Learning, 24, M2, CentraleSupélec , FR
- Master: Introduction to Signal Processing, 36, M1, CentraleSupélec , FR

9.2.2. Supervision

PhD in progress : Eugene Belilovsky, Structured Output Prediction on Large Scale Neuroscience Data, Universite Paris-Saclay & KU Leuven, 2014-2017, M. Blaschko

PhD in progress : Jiaqian Yu, Structured Prediction Methods for Computer Vision and Medical Imaging, Universite Paris-Saclay, 2014-2017, M. Blaschko

PhD in progress : Wacha Bounliphone, Statistical tools for Imaging-Genetics data integration, 2013-2016, Universite Paris-Saclay & KU Leuven, M. Blaschko & A. Tenenhaus

PhD in progress : Amal Rannen, Deep Neural Networks for OCT image analysis, Yonsei University & KU Leuven, M. Blaschko & Y.M. Jung

PhD in progress : Jose Ignacio Orlando, Computer assisted fundus image analysis for eye disease detection, Universidad Nacional del Centro de la Provincia de Buenos Aires, M. Blaschko & M. del Fresno

PhD in progress : Puneet Kumar Dokania, Learning to Rank with Missing and High-Order Information, 2012-2015, M. Pawan Kumar

PhD in progress : Diane Bouchacourt, Large Scale Diverse Learning for Structured Output Prediction, 2014-2017, M. Pawan Kumar

PhD in progress: Haithem Boussaid, Efficient Inference and Learning in Graphical Models for Multi-organ Shape Segmentation, 2011-2015, I. Kokkinos

PhD in progress: Stavros Tsogkas, Learning structured mid-level representations for object recognition, 2011-2015, I. Kokkinos

PhD in progress: Siddhartha Chandra, Efficient Learning and Optimization for 3D Visual Data, 2013-2016, I. Kokkinos, Pawan Kumar

PhD in progress: Stefan Kinauer, Surface-based representations for high-level vision tasks, 2013-2016, I. Kokkinos.

PhD in progress: Alp Guler, Learning 3D representations for high-level vision, 2016-2018, I. Kokkinos.

PhD in progress : Stavros Alchatzidis, Message Passing Methods, Parallel Architectures & Visual Processing, 2011-2014, Nikos Paragios

PhD in progress : Enzo Ferrante, 2D-to-3D Multi-Modal Deformable Image Fusion, 2012-2015, N. Paragios

PhD in progress : Vivien Fecamp, Linear-Deformable Multi-Modal Deformable Image Fusion, 2012-2015, N. Paragios

PhD in progress : Evgenios Kornaropoulos, Diffusion Coefficient: a novel computer aided biomarker, 2013-2016, N. Paragios

PhD in progress : Maxim Berman, Learning Higher Order Graphical Models, 2014-2017, N. Paragios, I. Kokkinos

PhD in progress : Hariprasad Kannan, Efficient Inference on Higher Order Graphs, 2014-2017, N. Paragios

PhD in progress : Huu Dien Khue Le, Graph-based Visual Perception : Theories and Applications, 2014-2017, N. Paragios

9.2.3. Juries

- **Matthew Blaschko**
  - **Grant Reviewing Services**: European Research Council (ERC), The French National Research Agency (ANR).
- **Iasonas Kokkinos**
  - **PhD Thesis Participation**: Matteusz Kozinski, Ecole des Ponts ParisTech (PhD).
- **Paragios, Nikos**
  - **PhD Thesis Participation**
  - **Grant Reviewing Services**

9.3. Popularization

- **Blaschko, Matthew**
  - **Presentations**: V Argentina Applied Maths Conference (MACI 2015)
- **Kokkinos, Iasonas**
  - **Presentations**: University of California at Los Angeles, Imperial College, Boston University, Xerox Research Center Europe

MIMESIS Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Reviewer

Stéphane Cotin made reviews for the following conferences:

VRIPHYS

VCBM (Visual Computing in Biology and Medicine)

and MICCAI.

David Cazier made reviews for the conference:

Computer Graphics International (CGI)

Nazim Haouchine made reviews for the conference:

International Symposium on Biomedical Imaging

9.1.2. Journal

9.1.2.1. Reviewer - Reviewing activities

Stéphane Cotin made reviews for:

the Medical Image Analysis journal.

Hadrien Courtecuisse made reviews for:

IEEE Haptics Symposium,

Transactions on Haptics,

The Visual Computer,

Medical & Biological Engineering & Computing.

David Cazier made reviews for:

the Computer-Aided Design (CAD) journal,

the Visual Computer journal.

Huu Phuoc Bui made reviews for:

the Computational Mechanics journal,

Nazim Haouchine made reviews for the journal:

IET Computer Vision

Rosalie Plantefeve made reviews for the journal:

IJCARS

9.1.3. Invited talks

Stéphane Cotin has been invited speaker:

keynote lecture at "Open Your Mind" seminar series, ECAM (Paris, France),

keynote lecture at the 10th MICCAI Computational Biomechanics Workshop (Munich, Germany)

keynote lecture at Visual Computing in Biology and Medicine (Chester, UK),

invited talk at HCST Medical Robotics (Tel Aviv, Israel),

invited speaker at the International Conference on Augmented and Virtual Reality (Salento, Italy).

Hadrien Courtecuisse has been invited speaker:

in the legato team at the Computational Mechanics department of the Luxembourg University July 2015,

at SINTEF Technology and Society Medical Technology Department. Trondheim, Norway,

at HCST Medical Robotics symposium. Tel-Aviv, Israel.

Hugo Talbot has been invited speaker:

at the Karlsruhe Institute of Technology in July 2015, Germany.

at the AVR Salento conference in October 2015, Italy.

Figure 16. Presentation of SOFA at the conference AVR Salento in Lecce (Italy)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Stéphane Cotin was in charge of the following course:

Course on real-time biomechanical simulation at École Catholique d'Arts et Métiers (Paris, France)

Hadrien Courtecuisse was in charge of the following courses:

Master TIC-Santé. Télécom Physique Strasbourg : Real time simulation (30h)

Master IRMC : (10 h) Real time simulation

David Cazier was in charge of the following course:

Licence : Web technologies and programming, 96hTD, DUT2, Université de Strasbourg, France

9.2.2. Supervision

Stéphane Cotin supervised

PhD defended (in co-direction with DEFROST team): Vincent Majorczyk, Modeling of the interactions between deformable bodies and fluids in the context of medical simulation in real-time, 1/01/2010 - 28/04/2015

PhD defended : Nazim Haouchine, Image-guided Simulation for Augmented Reality during Hepatic Surgery, 1/10/2011 - 16/01/2015

PhD in progress : Christoph Paulus, Modélisation et simulation temps-réel pour la prise en compte des changements topologiques dans les tissus mous, 1/01/2014

PhD in progress : Rosalie Plantefeve, Augmented reality and numerical simulations for resection of hepatic tumors, 1/01/2014

Hadrien Courtecuisse supervised:

PhD in progress: Yinoussa adagolodjo, Coupling between robotics and medical simulation for automated procedures in the scope of the CONECT project. University of Strasbourg, 1/02/2015

PhD in progress (in co-direction with the TIMC laboratory): Fanny Morin, Non linear simulation for intraoperative guidance for neurosurgery. Université de Grenoble, 1/10/2014

Internship : Asmaa Ait Hadouch, from Telecom Physique Strasbourg. Topic: communication protocol between Sofa, Mitsubishi MRV1A robot, and optitrack system fot the project CONECT, 1/06/2015 - 31/08/2015

David Cazier supervised:

PhD defended: Thomas Pitiot, Multiresolution tools for the management of interaction in real time simulations (Outils multirésolutions pour la gestion des interactions en simulation temps-réel), Université de Strasbourg, 17/12/2015

PhD in progress : Christoph Paulus, Modélisation et simulation temps-réel pour la prise en compte des changements topologiques dans les tissus mous, 1/01/2014

Frédérick Roy and Rosalie Plantefeve co-supervised:

Internship : Santiago Camacho, from Universidad de Buenos Aires. Topic: software development around visualization for augmented reality applications, 1/07/2015 - 1/12/2015

Hugo Talbot supervised:

Internship : David John, from Karlsruhe Institute of Technology. Topic: research around simulation of thermal effect in living tissues, development of specific solvers, 1/11/2015

Christoph Paulus supervised:

Internship : Sabrina Izcovich, from Universidad de Buenos Aires. Topic: research around second-order finite element methods and simulation of cutting, 1/09/2015

9.2.3. Juries

Stéphane Cotin was part of the following juries:

PhD defense: Mariem Gargouri Osman : "Caractérisation des usagers de la route par imagerie médicale : Extraction fine des paramètres géométriques des côtes à partir de volumes d'images CT", 06/2015 (President)

PhD defense: Vincent Majorczyk "Modélisation des interactions entre solides déformables et films fluides pour la simulation médicale temps-réel", 04/2015 (Supervisor)

PhD defense: Chloe Audigier "Modélisation de l'ablation radiofreéquence pour la planification de la résection de tumeurs abdominales", 10/2015 (President)

PhD defense: Pierre Chantereau "Caractérisation biomécanique et modélisation histologique des mécanismes de vieillissement et d'endommagement du système pelvien", 07/2015 (Reviewer)

David Cazier was part of the following juries:

PhD defense: Vincent Majorczyk, Modeling of the interactions between deformable bodies and fluids in the context of medical simulation in real-time, 4/11/2015 (Reviewer)

PhD defense: Evans Bohl, Modélisation de fruits de leurs structures internes et de leurs défauts, Université de Poitiers, 4/11/2015 (Reviewer)

PhD defense: Kevin Jordao, Interactive design of crowd animations in large environments, 21/12/2015 (Reviewer)

9.3. Popularization

9.3.1. IHU Scientific Days

At the occasion of the 4 IHU Scientific days in 2015, the MIMESIS took part and organized several meetings, presentation and discussions around simulation in medicine.

9.3.2. Journée Francaise de Radiologie, JFR

The MIMESIS team was part of the JFR 2015 event in Paris on the 16 and 17th October 2015. Hugo Talbot presented the work and the projects achieved by the team.

Figure 17. Our booth in the RII Health 2015 in Bordeaux

9.3.3. Rencontre Inria Industrie, RII

Hugo Talbot presented the SOFA framework and our current work during the "Rencontre Inria Industrie" 2015 which took place in Bordeaux. We had many nice discussions and feedback about SOFA.

9.3.4. Journée Alsacienne d'Ophtalmologie, JAO

In collaboration with the ophthalmologist Pr. Gauchet, several members of the team (Rémi Bessard, Bruno Marques and Stéphane Cotin) participated at the JAO (Journée Alsacienne d'Ophtalmologie) on the 28th and 29th of November 2015. They presented our prototype simulator for retinal surgery.

9.3.5. Talk at Université Paris Descartes

On the 4th of December, Stéphane Cotin was invited as a speaker to the BME seminar at University Paris Descartes. His talk was entiteled "patient safety through real-time numerical simulation".

9.3.6. Talk at MEDinISRAEL

Stéphane Cotin and Hadrien Courtecuisse were invited at the MedinISRAEL 2015 conference which took place in Tel Aviv. This event was the opportunity for the team to present our work to the community. Moreover, the university from Tel-Aviv strongly supports new collaborations with French laboratory.

9.3.7. Science & You

In Nancy, Science & You opened its doors on the 2nd of June. The MIMESIS team participated on June 5th and 6th to present some of our simulations. This was a great success and a large audience came to our booth.

Figure 18. Rémi Bessard presenting our simulation at JAO 2015

Figure 19. Presentation of Stéphane Cotin at MEDinISRAEL 2015

9.3.8. Pitch at B.E.S.T. Symposium

B.E.S.T. (Business Engineering and Surgical Technologies) is an original education program proposed by the IHU Strasbourg dedicated to undergraduate, graduate and postgraduate students in medicine, engineering and management. In the context of the B.E.S.T. Symposium, Hugo Talbot presented a concept of start-up about medical training based on simulation which any student could afford. Rosalie Plantefeve also attended the B.E.S.T. Symposium.

MNEMOSYNE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

Nicolas Rougier: Program chair for the EuroScipy 2015 conference. Organization of the "Tentatives, Tentations, Intentions" conference (Nancy, December 2015).

10.1.1.2. Member of the organizing committees

Frédéric Alexandre: Member of the organizing committee of the Conference "Cognition and Innovation", Paris, November 5-6th, cf http://fondation-cognition.org/?q=node/259.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

Frédéric Alexandre: Member of program committee of CAP 2015 (french conference on Machine Learning)

10.1.2.2. Reviewer

- Nicolas Rougier: Reviewer for EuroScipy 2015, Scipy 2015, ICANN 2015.
- Frédéric Alexandre: Reviewer for the International IEEE EMBS Conference on Neural Engineering; for the International Conference on Development and Learning and on Epigenetic Robotics (ICDL-EPIROB 2015);

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- Frédéric Alexandre: Review Editor for Frontiers in Neurorobotics;
- Nicolas Rougier: Editor in chief for ReScience, review editor for Frontiers in Neurorobotics.

10.1.3.2. Reviewer - Reviewing activities

- Nicolas Rougier: Reviewer for PLOS ONE, Frontiers in Neuroscience, IEEE Transactions on Visualization and Computer Graphics, IEEE Transactions on Image Processing, Journal of Computer Graphics Techniques
- Frédéric Alexandre: Reviewer for Cognitive Computation, PlosOne, Applied Intelligence

10.1.4. Invited talks

- Nicolas Rougier: Invited tutorial ("Neural Fields and cognition") at the 24th Annual Computational Neuroscience Meeting in Prague; Invited talk ("Distributed, Asynchronous, Numerical and Adaptive computing: from neurons to behavior." at the first meeting og the BioComp initiative; Invited tutorial ("matplotlib for beginner") at EuroScipy 2015.
- Frédéric Alexandre: invited talk at the symposium "Modeling the early visual system: From natural vision to numerical applications" of the 12th meeting of the French Neuroscience Society; Invited talk at the special day on modeling irrationality in cognition, organized jointly by the french society of Artificial Intelligence and the french society of Research on Cognition; Invited talk at the scientific council of IMB (institute of mathematics in Bordeaux, june 23rd);

10.1.5. Scientific expertise

Expert for the BBSRC research council (UK) (Nicolas Rougier)

10.1.6. Research administration

- F. Alexandre is member of the Inria Evaluation Committee; Vice-head of the Project Committee of Inria Bordeaux Sud-Ouest; Corresponding scientist for Bordeaux Sud-Ouest of the Inria COERLE ethical committee; Member of the national Inria committee for international chairs; Member of the local Inria committee for young researchers hiring; Member of the steering committee of the regional Cluster on Information Technology and Health; of the regional Cluster on Robotics; Expert of the ITMO 'Neurosciences, Sciences Cognitive, Neurologie, Psychiatrie'
- N. Rougier is vice-head of the Mnemosyne team-project; elected member of the Inria Evaluation Committee; Responsible of the local Inria committee for invited professors; Member of the steering committee for the BioComp CNRS consortium; Editor in chief and co-founder of ReScience.
- Thierry Viéville is in charge, at the Inria national level, of the institute science outreach actions and depends on the Direction Générale Déléguée à la Science for this part of his work. He is, for Inria, at the origin of the http://classcode.fr project, and drives it [18], [12].

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Many courses are given in universities and schools of engineers at different levels (LMD) by most team members, in computer science, in applied mathematics, in neuroscience and in cognitive science.

Thierry Viéville is since 2009 in charge of formations of high-school teachers in popular computer science.

10.2.2. Juries

We participate to many juries each year.

10.3. Popularization

For a multi-disciplinary team as Mnemosyne, science popularization is not only a nice and useful contribution to the dissemination of scientific knowledge but also a necessity since we work with colleagues from bio-sciences with whom sharing profound ideas in computer science is mandatory for a real collaboration.

- Thierry Viéville is for 80% of his time involved in popularization actions [35], both at a concrete level (including on Mnemosyne subjects [23]) and at the methodological level [34], [19]. This explains the amount of references to these external subjects in this document.
- Nicolas Rougier: Question/answers about Artificial Intelligence (AI) with the general public (NODE, Bordeaux); popularized article about AI on Interstices; invited talk for the "Pint of Science" festival; interview about AI in the `#Thinovery` magazine; two articles in "The Conversation (FR)" about neurosciences and AI; "Unithé ou Café" at Inria BSO; Blog posts in "Binaires" (36 15 EULA) and "Scilogs" ("L'intelligence artificielle n'aura pas lieu.")
- Frédéric Alexandre: Blog post in Scilogs: "Rien de neuf sous le soleil de l'IA" (www.scilogs.fr/intelligence-mecanique/rien-de-neuf-sous-le-soleil-de-lia/); Conference at the Bordeaux museum of science (Cap Sciences, March 5th) "Modeling the brain to better understand neurodegenerative diseases"; Article in the french scientific magazine Pour la Science: "Where are the real dangers of Artificial Intelligence" (http://www.pourlascience.fr/ewb_pages/a/article-ou-sont-les-vrais-dangers-de-l-apos-intelligence-artificielle-35148.php); Conference at the Multimedia Library of Tulle "Modeling emotions to better understand neurodegenerative diseases" (March 28th); Participation to the french radio broadcast 3D on the national channel France Inter (http://www.franceinter.fr/emission-3d-le-journal-robots-cops, May 31st); Interview in the french scientific magazine Science et Vie Junior ("Must we fear super intelligences", issue of August); Interview in Inriality "Who is afraid about Artificial Intelligence" (http://www.inriality.fr/communication/intelligence-artificielle/qui-peur-de/); Responsible for the Masterclass "Think different" to the Biznext conference (december17th, Bordeaux, cf interview http://objectifaquitaine.latribune.fr/innovation/2015-11-20/les-robots-intelligents-nous-poussent-ils-a-penser-le-monde-autrement.html and announcement on TV http://france3-regions.francetvinfo.fr/aquitaine/emissions/jt-1213-aquitaine);

- PhD students participated to the regional exhibition Aquitec (C. Héricé and Maxime Carrere), to “Fête de la Science” (I. Chraibi Kaadoud and C. Héricé), to “Printemps des filles” (I. Chraibi Kaadoud and C. Héricé) and to the organizing committee of Pint of Science Bordeaux (C. Héricé).

NEUROMATHCOMP Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

Olivier Faugeras was the General Chair of the 1st International Conference on Mathematical Neuroscience, held in Antibe-Juan les Pins, June 8-10 2015.

8.1.1.2. Member of the organizing committee

Romain Veltz and James Inglis are members of organizing committee of the 1st International Conference on Mathematical Neuroscience, held in Antibe-Juan les Pins, June 8-10 2015.

We have co-organized the conferences:

- Confronting mean-field theories to measurements a perspective from neuroscience, Paris 14-15 January 2015 (Bruno Cessac, Olivier Faugeras).
- Modeling the early visual system: From natural vision to numerical applications. Satellite of the 12 eme colloque societe des neurosciences, Montpellier, 19-22 May 2015 (Bruno Cessac).
- Mathematical Modeling and Statistical Analysis in Neuroscience workshop, Nice 8-10 September, (Bruno Cessac).
- Workshop on Heteroclinic Dynamics in Neuroscience, Nice 17-18 December, (Pascal Chossat, Mathieu Desroches, Maciej Krupa).

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committees

Pierre Kornprobst was area Chair of the 23rd edition of the European Signal Processing Conference (EUSIPCO 2015) for the theme Bio-inspired image and signal processing.

8.1.2.2. Member of the conference program committees

Pierre Kornprobst was a member of the program committee of the Conference of "Groupement de Recherche en Traitement du Signal et des Images" (GRETSI 2015) and of the Conference on Computer Vision and Pattern Recognition (CVPR 2015).

8.1.3. Journal

8.1.3.1. Member of the editorial boards

Olivier Faugeras is the co-editor in chief of the open access Journal of Mathematical Neuroscience.

8.1.3.2. Reviewer - Reviewing activities

Olivier Faugeras acts as a reviewer for the Journal of Mathematical Neuroscience, the Journal of Computational Neuroscience, the SIAM Journal on Applied Dynamical Systems (SIADS).

Maciej Krupa acts as a reviewer for Nonlinearity, Proceedings of the National Academy of Sciences of the USA (PNAS), the SIAM Journal of Applied Dynamical Systems (SIADS).

Mathieu Desroches acts as a reviewer for Journal of Nonlinear Science, Physica D, the SIAM Journal of Applied Dynamical Systems (SIADS).

8.1.4. Invited talks

Pierre Kornprobst gave an invited talk at the workshop entitled “From Retina to Robots – Connecting the Neural Computations of Early Vision to Neuromorphic Engineering and Artificial Vision” at the Bernstein Conference for Computational Neuroscience in Heidelberg, Germany, on September 14, 2015 (organized by Tim Gollisch and Stefano Panzeri).

8.1.5. Research administration

Pierre Kornprobst is an elected member of the Conseil Académique de l’UCA, member of the editorial committee of the Sophia Antipolis internal letter and "représentant de l’administration suppléant".

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

E-learning

Master 2: Bruno Cessac, *Neuronal dynamics*, 36 hours, Master of Computational Biology and Biomedicine, Université Nice Sophia Antipolis, France.

Summer school: Bruno Cessac, *Mean Field Methods in Neuroscience*, 3h, Lecture given in the conference Dynamics of Multi-Level Systems, Jun 2015, Dresde, Germany .

Chalk-learning

Master 2 MVA/UPMC: Romain Veltz, Mathematical Methods for Neurosciences, 20 hours, Paris, France.

8.2.2. Supervision

PhD in progress: Kartheek Medathati, "Motion perception: from neuroscience to computer vision", started in September 2013, co-supervised by Pierre Kornprobst and Guillaume S. Masson (Institut de Neurosciences de la Timone, Marseille, France).

PhD in progress: Theodora Karvouniari, «Retinal waves in the retina: theory and experiments», defence planned in October 2017, supervised by Bruno Cessac.

8.2.3. Juries

- Bruno Cessac. Reviewer of Luis Garcia Del Molino’s thesis, "Non-Hermitian random matrices and applications to randomly connected firing rate neuronal network" (supervision Jonathan Touboul, Khashasyar Pakdaman). Paris, 01-10-15.

NEUROSYS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of Organizing Committees

- NETT workshop about *Neural Engineering in Medicine and related fields* in Nancy, 2-3 July 2015 (A. Hutt, L. Bougrain)
- BCI competition, IEEE Neural Engineering Conference, Montpellier, 2015 (L. Bougrain).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Chair of the international workshop *Neural Engineering in Medicine and Related Fields*, July 2-3, Nancy

10.1.2.2. Member of Conference Program Committees

- Workshop *Neural Engineering in Medicine and Related Fields*, July 2-3, Nancy (A. Hutt, L. Bougrain)
- French conference on machine learning CAP 2015 (L. Bougrain)
- IEEE International Conference on Systems, Man, and Cybernetics (SMC) special sessions on Brain-Machine Interfaces, Hong Kong, 2015 (L. Bougrain)
- International Joint Conference on Artificial Intelligence (IJCAI) 2015 (L. Bougrain)

10.1.2.3. Reviewer

- French conference on machine learning CAP 2015 (L. Bougrain)
- IEEE International Conference on Systems, Man, and Cybernetics (SMC) special sessions on Brain-Machine Interfaces, Hong Kong, 2015 (L. Bougrain)
- International Joint Conference on Artificial Intelligence (IJCAI) 2015 (L. Bougrain)

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

Nonlinearity, Neurocomputing, Journal of Computational Neuroscience, SIAM Journal of Applied Dynamical Systems, Journal of Mathematical Neuroscience, Frontiers in Neurology, Physical Review E, Physical Review Letters, Journal of Neuroscience (A. Hutt); PLoS Computational Biology, Frontiers in Computational Neuroscience (L. Buhry); Reviewing activities: IEEE Transactions on Signal Processing, ACM Transactions on Sensor Networks, Signal Processing: Image Communication (T. Tosic)

10.1.4. Invited talks

- Tutorial "Fundamentals in Neural Field and Neural Mass models", Computational Neuroscience Conference, July 17 and 18, Prague (A. Hutt);
- Seminar talk "Noise-induced neural oscillations", Max Planck Institute for Brain Research, May 26, Frankfurt am Main (A. Hutt);
- Seminar talk "Brain Signals Analysis for Brain-Machine Interfaces", UCL-France Workshop *Virtual reality in rehabilitation, accessibility and mobility*, Univ. College London, May 21-22, London (L. Bougrain)
- Seminar talk "EEG-based control of a Jaco robotic arm", International workshop *Neural Engineering in Medicine and Related Fields*, July 2-3, Nancy (L. Bougrain);
- Tutorial "Time-frequency analysis", Ludwig-Maximilians-Universität (LMU), Nov. 2015, Munich (M. Fedotenkova)
- Seminar talk "Distinguishing between pre- and post-incision under general anesthesia by spectral and recurrence analysis of EEG", Ludwig-Maximilians-Universität (LMU), Nov. 2015, Munich (M. Fedotenkova)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Engineering School: L. Bougrain, *Artificial Intelligence*, 109h, 3rd year, Telecom Nancy, France

Engineering School: L. Bougrain, *Brain-Computer interfaces*, 4.5h, 3rd year, Supelec, France

Engineering School: T. Tosic, *Process and knowledge modeling*, 27h, 3rd year, École des Mines Nancy, France

Engineering School: T. Tosic, *Informatique I*, 20h, 2nd year, École des Mines Nancy, France

Engineering School: T. Tosic, *Techniques et solutions informatiques*, 24h, 3rd year, École des Mines Nancy, France

Engineering School: T. Tosic, *ARTEM workshop ABCD Web*, 40h, 3rd year, ICN, Ecole d'art et design, École des Mines, France

Engineering School: A. Hutt, *Pépites Algorithmiques*, 9h, niveau M1, École des Mines Nancy, France

Engineering School: F. Giovannini, *Artificial Intelligence*, 32h, 3rd year, Telecom Nancy, France

Engineering School: F. Giovannini, *Techniques and tOols for Programming*, 32h, 1st year, Telecom Nancy, France

Licence: L. Buhry, *Applications en Sciences Cognitives*, 3h, niveau L1 MIASHS, University of Lorraine, France

Licence: L. Buhry, *Programmation Python*, 37h, niveau L1 MIASHS, University of Lorraine, France

Licence: L. Buhry, *IA et Résolution de problèmes*, 25h, niveau L3 MIASHS, University of Lorraine, France

Licence: L. Bougrain, *mobile development*, 35h, Licence of computer science (3st year), University of Lorraine, France

Licence: L. Bougrain, *artificial intelligence*, 35h, Licence of computer science (3st year), University of Lorraine, France

Licence: L. Bougrain, *optimization*, 37.5h, Licence of computer science (3st year), University of Lorraine, France

Master: L. Buhry, *Algoritmique pour l'intelligence artificielle*, 31h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France

Master: L. Buhry, *IA fondamentale et fouille de données*, 18h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France

Master: L. Buhry, *Formalismes de Représentation et Raisonnement*, 25h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France

Master: L. Buhry, *Memory and Machine Learning (in English)*, 38h, niveau Master 1 SCA (Sciences Cognitives et Applications), University of Lorraine, France

Master: L. Buhry, *Neurosciences Computationnelles*, 25h, niveau Master 2 SCMN, University of Lorraine, France

Master: L. Bougrain, *Machine learning*, 18h, Master of computer science, 2st year, University of Lorraine, France

Master: L. Bougrain, *Human factors*, 30h, Master of computer science 1st year, University of Lorraine, France

10.2.2. Supervision

- PhD in progress: Meysam Hashemi, Analytical and numerical studies of thalamo-cortical neural population models during general anesthesia, May 2012, A. Hutt
- PhD in progress: Mariia Fedotenkova, Detection of EEG-signal features for pain under general anaesthesia, November 2013, A. Hutt
- PhD in progress: Cecilia Lindig-Leon, Multilabel classification for a 3D control of a robotic arm using band-specific EEG markers associated with a motor task, November 2013, L. Bougrain and A. Hutt
- PhD in progress: Francesco Giovannini, Mathematical modelling of the memory system under general anesthesia, October 2014, L. Buhry and A. Hutt
- Winter 2015 Internship: Jean-Baptiste Jordan Schneider (M1 Biology, univ. de Lorraine), *Investigating the Effects of Propofol-Induced Tonic Inhibition on Rhythmic Neural Activity in a Hippocampal Interneuron Network* (F. Giovannini, L. Buhry)
- Master research project (2nd year): Louis Viard (Engineering School Ecole des Mines de Nancy), *Detection of micro-awake episodes in sleep signal using time-frequency descriptors* (T. Tosic)
- Master thesis: Sébastien Rimbert (master of cognitive science, univ. de Lorraine) *Study of the dynamics of brain motor components during anesthesia* (L. Bougrain)
- Master thesis: Benjamin Le Golvan (master of biomedical engineering, univ. de Lorraine) *Longitudinal study of motor activities* (L. Bougrain)

10.2.3. Juries

- Axel Hutt was member of PhD committee of Arnaud Legendre, University of Mulhouse, as reviewer. He has participated in the candidates defence October 28 2015.

10.2.4. Commitees

- Member of the IES committee (Commission Information et Edition Scientifique) at Inria Nancy–Grand-Est (Laurent Bougrain)
- Member of Inria committee COST-GTRI to evaluate Inria Associate Teams (Axel Hutt).

10.3. Popularization

- Talks at Science and You: atelier scolaire "Femmes et sciences : une équation facile à résoudre !" – June 5th 2015 (L. Buhry)
- Talk during the National Brain week: Brain, Consciousness and Anesthesia, March 24th 2015, central hospital, Nancy (D. Schwartz, A. Hutt, L. Bougrain)
- Exhibit at Loria's open day for master students: controlling a robotic arm using EEG, April 9th, 2015 (L. Bougrain, B. le Golvan)

PARIETAL Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- **Bertrand Thirion**: STAMLINS workshop (ICML 2015)
- **Gaël Varoquaux**: MLOSS workshop (ICML 2015)

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- **Philippe Ciuciu**: Member of the programm committe for the GRETSI 2015 conference located in Lyon.
- **Philippe Ciuciu**: Organizer of the special session dedicated to Signal processing for Neurosciences
- **Bertrand Thirion**: Organization for Human Brain Mapping.

10.1.2.2. Reviewer

- **Bertrand Thirion**: IPMI, MICCAI, NIPS, ISBI, PRNI
- **Gaël Varoquaux**: IPMI, MICCAI, NIPS, ICASSP, Scipy
- **Philippe Ciuciu**: IEEE ICASSP, IEEE ISBI, IEEE ICIP, PRNI.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- **Bertrand Thirion**: Medical Image Analysis, Frontiers in brain imaging
- **Gaël Varoquaux**: Frontiers in NeuroInformatics, Frontiers in brain imaging methods, NeuroImage

10.1.3.2. Reviewer - Reviewing activities

- **Bertrand Thirion**: Human Brian Mapping, IEEE TMI, MedIA, NeuroImage, PNAS
- **Gaël Varoquaux**: NeuroImage, JSTSP, PNAS
- **Philippe Ciuciu**: IEEE Signal Processing letters, IEEE Trans on Medical Imaging, IEEE Trans on Selected Topics in Signal Processing, NeuroImage, Human Brain Mapp, The Journal of Neuroscience, Frontiers in Neuroscience - Brain Imaging Section, The Journal of Neuroscience Methods. Reviewer for the following international conferences in 2015: The first three are commitments due to my involvement to the IEEE BioImaging Signal Processing committee since 2013. Reviewer for the following national conference: GRETSI

10.1.4. Invited talks

10.1.4.1. Bertrand Thirion

- Seminar QBIN, Montreal (Jan 30th)
- Invited talk MILM workshop, ICML, LIlle (July 11th)
- Seminar Lear, Inria GRA (Sept 3rd)
- Seminar Univ. Lièges (Sept 23rd)
- Seminar INT, Marseille (Sept 24th)
- Invited talk, Big Data Convention, Saclay (Nov 30th)
- Invited Talk, Seminar 'Horizon Math', FSMP (Dec 15th)

10.1.4.2. Gaël Varoquaux

- Seminar Max Planck Institute Tuebingen (Oct 8th)
- Seminar fMRIB Oxford (Sept 24th)
- Invited talk MLOSS workshop, ICML, Lille (July 7th)
- Seminar OECD Paris, (July 1st)
- Invitied talk ODSC (Boston May 30th)
- Keynote: workshop on machine learning at Society for Affective Neuroscience (Oakland, April 9th)
- Invited talk IRT Système X, (Palaiseau, May 19th)
- Keynote Pycon Russia (Yekaterinburg, Sept 18th)
- Keynote Pydata Paris (Paris, April 4th)
- Invited talk, Feindel Brain Imaging Lecture (McGill, Montreal): http://www.mcgill.ca/bic/channels/event/feindel-brain-imaging-lecture-methods-resting-state-connectome-biomarkers-dr-gael-varoquaux-256587
- Invited speaker BioImage Informatics GDR, Paris http://gdr-miv.fr/en/events/bioimageinformatics2015/
- Invited speaker, workshop LHCb, Paris https://indico.cern.ch/event/337568/session/1/contribution/32

10.1.4.3. Philippe Ciuciu

- European Institute of Theoretical Neuroscience: March, 13 2015: Convergence to Asymptotic Multifractal Dynamics Predicts Learning
- IXXI Rhône Alpes, Grenoble Dec, 8 2015: Complexity Measures in Brain Activity: The functional Role of Scale-Free Brain Dynamics

10.1.4.4. Loïc Estève

- Scipy 2015 (July 9th), http://scipy2015.scipy.org/ehome/115969/297898/
- Open Software Initiative (October 26th), https://indico.lal.in2p3.fr/event/2987/other-view?view=standard

10.1.5. Leadership within the scientific community

- Gaël Varoquaux: Chair of the steering committee, IEEE PRNI
- Philippe Ciuciu: Member of the newly founded Biomedical Image & Signal Analytics Special Area Teams in the EURASIP society. Chairman: Dimitri Van De Ville.
- Bertrand Thirion: member of the *Committee on Best Practices in Data Analysis and Sharing* for th OHBM community.

10.1.6. Scientific expertise

Gaël Varoquaux:

- Member of the working group on big data for the Paris-Saclay university
- Member of the working group on smart data in the "TIC & Santé" commission

Philippe Ciuciu:

- Expert for funding agencies: 1st round for ANR, annual call of FWO (Flanders universities), Fond National Suisse de la Recherche, Wellcome Trust (UK), NSERC (Canada).
- Participation to the CEA scientific council on Nov/Dec 2015 on High Performance Computing.

10.1.7. Research administration

Bertrand Thirion:

- Comex Labex Digicosme
- Comex Lidex PIM
- Comex department STIC Paris-Saclay University
- DSA Saclay.

Gaël Varoquaux:

- Member of "Commité de suivi doctoral", Inria Saclay
- Member of "Commité cluster", Inria Saclay

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : Bertrand Thirion, Brain Computer interface and Functional Neuroimaging, 12 heures équivalent TD, niveau M2, ENS Cachan

Master : Bertrand Thirion, Analysis of functional connectivity, 3 heures équivalent TD, niveau M2, Université Paris 5

Master : Gaël Varoquaux, Advanced Neuroimaging Data Analysis, 7.5 heures équivalent TD, niveau M2, Télécom ParisTech, Paris

Master : Gaël Varoquaux, Python for data science, 3 heures équivalent TD, niveau M2, ENSAE, Paris

Master : Michael Eickenberg, Loïc Estève, Practical sessions on scikit-learn, 6 hours, M2, Paris-Saclay University, France

Doctorat : Gaël Varoquaux, nilearn: machine learning for neuroimaging, 12 heures équivalent TD, Max Planck Institute Leipzig, Allemagne

Doctorat : Gaël Varoquaux, nilearn: machine learning for neuroimaging, 12 heures équivalent TD, Stanford, Etats Unis

Doctorat : Gaël Varoquaux, pattern recognition for neuroimaging, 1 heures équivalent TD, OHBM, Honululu, Etats Unis

Doctorat : Gaël Varoquaux, statistics in Python, 3 heures équivalent TD, Euroscipy, Cambridge, Angleterre

Doctorat : Loïc Estève (helper), Software Carpentry Bootcamp, 12 hours, European Institute for Theoretical Neuroscience, France https://btel.github.io/2015-11-19-eitn/

E-learning

Pedagogical resources : Gaël Varoquaux, Scipy lecture notes, ebook, niveau master ou plus, http://www.scipy-lectures.org

10.2.2. Supervision

PhD : Nicolas Chauffert, "Physically plausible k-space trajectories for compressed sensing in MRI", Université de Paris-Sud, ED EOBE, 28/9/2015, Philippe Ciuciu (Directeur) & Pierre Weiss

PhD : Yannick Schwartz, "Large-scale functional MRI analysis to accumulate knowledge on brain functions" Université de Paris-Sud, ED STIC, 21/4/2015, Bertrand Thirion (Directeur) & Gaël Varoquaux

PhD : Fabian Pedregosa, "Feature extraction and supervised learning on fMRI: from practice to theory" Université de Paris-Sud, ED STIC, 21/4/2015, Bertrand Thirion (Directeur) & Alexandre Gramfort

PhD : Michael Eickenberg," Université de Paris-Sud, ED STIC, 21/4/2015, Bertrand Thirion (Directeur) & Alexandre Gramfort

PhD : Alexandre Abraham," " Université de Paris-Sud, ED STIC, 21/4/2015, Bertrand Thirion (Directeur) & Gaël Varoquaux

10.2.3. Juries

Bertrand Thirion:

- Rapporteur de la thèse de Raphael Liégeois (Lièges University, Belgium)
- Rapporteur de la thèse de Loïc Le Folgoc (Université Nice Sophia-Antipolis)
- Directeur du jury de thèse de Sylvain Takerkart (Université Aix-Marseille)

Gaël Varoquaux:

- Rapporteur de la thèse de Siina Pamila (Aalto University, Finlande)
- Examinateur de la thèse de Yoann Isaac (Université Paris Sud, directrice de thèse Michèle Sébag)

10.3. Popularization

Gaël Varoquaux: La tête au carré, on Junarury 13th, 2015: http://www.franceinter.fr/emission-la-tete-au-carre-big-data-quand-les-donnees-servent-a-predire

Stand à la Fete de la science CRI Saclay, 9 octobre (Alexandre Abraham, Arthur Mensch, Bertrand Thirion).

POPIX Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Invited talks

Marc Lavielle was invited speaker at Bayes 2015 (Basel).

10.1.2. Scientific expertise

Marc Lavielle is member of the Scientific Committee of the High Council for Biotechnologies

10.1.3. Research administration

Marc Lavielle is member of

- the Scientific Programming Committee (CPS) of the Institute Henri Poincaré (IHP),
- the Executive Board (CA) of SMAI.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Miscellaneous: Marc Lavielle, Population approach and Mixed effects models: PAGE meeting 2015 (Crete);

Miscellaneous: Marc Lavielle, SFdS Workshop about mixed effects models, Paris 2015.

10.2.2. Juries

- Marc Lavielle was referee for PhD of Artemis Llamosi (Paris Diderot)

SISTM Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

The practical part of "Atelier INSERM", *Big Data in clinical research*, was organized at Bordeaux by the team in Oct 2015.

9.1.1.1. Member of the organizing committee

BMW (Bordeaux Modeling Workshop), a two days workshop was organized (with 30 participants).

8th French Clinical Epidemiology Conference EPICLIN

Colloque Francophone International sur l'Enseignement de la Statistique - CFIES'2015, Janv 2015 Bordeaux

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

RT is a member of the scientific committee of IWHOD International Workshop on HIV Observational Databases from 2013,

9.1.3. Journal

9.1.3.1. Member of the editorial board

Lifetime Data Analysis (DC)

Stat Surveys (DC)

Journal de la Société Française de Statistique (DC)

9.1.3.2. Reviewer

The members of the team reviewed numerous papers for the following international journals :

AIDS (RT)

Biometrical (BL)

Biometrics (DC)

Health Services and Outcome Methodology (DC)

International Jounral of Epidemiology (DC)

Journal of Applied Statistics (MA)

Journal of Multivariate Analysis (RG)

Journal of the Royal Statistical Society: Series A (DC)

Statistical Methods and Applications (MA)

Statistics in Medicine (DC, RT)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : MA teaches in the two years of the Master of Public Health at ISPED, Univ. Bordeaux, France. Furthermore, she is head of the first year of the master.

Master : DC, teaches occasionnaly in the Biostatistics specialty of the second year of the Master of Public Health.

Master : RG, teaches in the two years of the Master of Public Health.

BL teaches at the School of Mathematics and Physics (The University of Queensland, Australia).

Master : RT, teaches in the two years of the Master of Public Health, and he is head of the Epidemiology specialty of the second year of the Master of Public Health.

E-learning

MA is head of the first year of the e-learning program of the Master of Public Health, and teaches in it.

RG teaches in the first year of the e-learning program of the Master of Public Health.

RT is head of the Epidemiology specialty of the second year of the e-learning program of the Master of Public Health, and teaches in it.

RG and Perrine Soret participate to the IdEx Bordeaux University "Défi numérique" project "Begin'R".

9.2.2. Supervision

PhD defended in Dec 2015 : Ana Jarne, *Modélisation de la réponse à l'IL-7*, co-directed by Daniel Commenges & Rodolphe Thiébaut

PhD defended in Mar 2015 : Boris Hejblum, *Analyse integrative de données de grande dimension appliquée à la recherche vaccinale*, co-directed by Rodolphe Thiébaut & François Caron

PhD defended in Oct 2015 : Marie-Quitterie Picat, *Méthodes pour l'analyse intégrative des marqueurs immunologiques*, directed by Rodolphe Thiébaut

PhD in progress : Perrine Soret, *Modélisation de données longitudinales en grande dimension*, from Oct 2014, directed by Marta Avalos

PhD in progress : Chloé Pasin, *Modelling the immune response to HIV vaccine*, from Sep 2015, co-directed by Rodolphe Thiébaut and François Dufour

PhD in progress : Laura Villain, *Analysing and modeling the effect of interleukin 7 in HIV-infected patients*, from Sep 2015, co-directed by Rodolphe Thiébaut and Daniel Commenges

PhD in progress : Mélanie Née *Recherche et caractérisation de profils attentionnels : mieux comprendre la place de l'attention dans la survenue des accidents de la vie courante*, from Oct 2015, co-directed by Emmanuel Lagarde (60%), Cédric Galera (20%), Marta Avalos (20%)

Master internship : Chariff Alkhassim, *Reconnaissance automatique de populations cellulaires à l'aide de processus de Dirichlet*, from Feb 2015 to Sep 2015, co-directed by Rodolphe Thiébaut & François Caron

Master internship : Edouard Lhomme, *Analyse de la réponse immunologique au vaccin Ad5 dans un essai americain (HVTN 068)*, from Feb 2015 to Sep 2015, directed by Rodolphe Thiébaut

Master internship : Marina Travanca *Prédiction des accidents de la vie courante à partir de facteurs environnementaux et comportementaux : comparaison de méthodes d'apprentissage statistique adaptées aux données de l'observatoire MAVIE* from Apr 2015 to Jun 2015, co-directed by Marta Avalos and Ludivine Orriols

Master internship : Gaëlle Lefort *Développement d'un outil statistique d'aide à la décision pour l'organisation de l'entraînement chez des sportifs de haut niveau*, directed by Marta Avalos

Master internship : Emilie Chanfreau, *Etude de l'élagage dans la méthode des forêts aléatoires*, from Apr 2015 to Jun 2015, directed by Robin Genuer

Master internship : Maëva Kyeng, *ETUDE DE L'EVOLUTION DE LA CHARGE VIRALE CHEZ LES PATIENTS ATTEINTS Du VIH : COMPARAISON DE DEUX METHODES STATISTIQUES*, from Apr 2015 to Jun 2015, directed by Perrine Soret

9.2.3. Juries

Members of the team were involved in 6 PhD juries, 2 professorships and 2 HDR.

9.3. Popularization

MA and Perrine Soret animate "Les maths sont bonnes pour la santé" for high school students through the "Fête de la Science" organized at Inria, Oct 2015.

VISAGES Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. General chair, scientific chair

- C. Barillot was Chair of the MAPPING Miccai Workshop, Munich, Germany, 2015 https://project.inria.fr/fli/en/mapping-workshop/

10.1.1.2. Member of the organizing committees

- C. Barillot is member of the Board of Directors of IPMI conference series (Information Processing in Medical Imaging)
- C. Barillot was member of the Scientific Program Board of ESMRMb 2015 (Edinburgh, UK)
- G. Edan is founder and co-organizer of the annual ARSEP-MRI symposium since 2015
- G. Edan is co-chair of the executive board of the "European charcot foundation" symposium since 2000

10.1.2. Scientific events selection

- C. Barillot is area chair of SPIE Medical Imaging 2015

10.1.2.1. Chair of conference program committees

- C. Barillot was Chair of MAPPING Miccai Workshop, Munich, Germany, 2015

10.1.2.2. Member of the conference program committees

- C. Barillot was TPC member of MICCAI workshops (Patch-MI 2015, MCV 2015), CCGrid - Life 2015
- O. Commowick was TPC member of MICCAI 2015
- O. Commowick was TPC member of IEEE ISBI 2015
- P. Maurel was TPC member of IEEE ISBI 2015
- E. Bannier reviewed for ISMRM 2015

10.1.3. Journal

10.1.3.1. Member of the editorial boards

- C. Barillot is member of Editorial Boards of Medical Image Analysis, Current Medical Imaging Reviews, ISRN Signal Processing
- C. Barillot is Editor-in-Chief of Frontiers in ICT: Computer Image Analysis.

10.1.3.2. Reviewer - Reviewing activities

- IEEE TIP (CB), IEEE TMI (OC, PM), Medical Image Analysis (CB, SP, OC), NeuroImage (CB, OC, IC), Neuroimage clinical (CB), Hum. Brain Map. (CB), Phys. Med. Biol. (CB), Computer Methods and Programs in Biomedicine (CB), Comput. Med Im & Graph (CB), Comp Meth & Prog in Biomed (CB), IEEE Signal Proc. Let. (CB), Magnetic Resonance in Medicine (EC), Plos-ONE (CB, EC), IJICT (CB), IJSISE (CB), IJCVR (CB), Journal of Mathematical Imaging and Vision (CB, PM), Magma (CB), Trans on Parallel and Dist. Sys. (CB), Neurobiology of Aging (IC).

10.1.4. Invited talks

- G. Edan - “Natural history of Multiple Sclerosis”, International congress of Multiple Sclerosis, Porto, Feb 2015 (Porto)2015
- I. Corouge and J. Guillaumont - "Shanoir: a solution for neuro-imaging data management", Gen2bio National congress, La Baule, March 2015
- B Carsin-Nicol and J. Guillaumont - "Présentation du protocole IRM recommandé par l'OFSEP et du projet Shanoir", CIRGO - Colloque inter-régional du Grand Ouest , Nantes, December 2015
- C. Barillot - "Science Data Ecosystem in Medical Imaging", Data Science symposium : Science Data Ecosystem workshop, IRISA, Nov. 19th
- C. Barillot - "Imagerie de population: Noeud FLI-IAM", Journées Françaises de Radiologie, Paris, Oct. 15th, 2015

10.1.5. Leadership within the scientific community

- G. Edan was elected Fellow of the European Academy of Neurologie. Member of the EAN teaching committee in 2015
- C. Barillot is member of the Scientific Council of the INS2I Institute of CNRS since 2011 and is Chairman of the Board since 2015 (http://csins2i.irisa.fr)
- C. Barillot is member of the C3N committee (CNRS)
- C. Barillot is member of the scientific board of "GIS France Grilles"
- C. Barillot is member of the Governing Board of the "Pole de compétitivité Images & Réseaux"

10.1.6. Scientific expertise

- C. Barillot chaired an evaluation committe for the FET-Flagship "Human Brain Project"
- C. Barillot reviewed for the Vienna Business Agency Foundation
- C. Barillot reviewed for the National Medical Research Council (NMRC), Singapore
- C. Barillot reviewed for the Research Council of KU Leuven
- C. Barillot reviewed for the Royal Netherlands Academy of Arts and Sciences.
- C. Barillot was member of the admission committee for the Research Director competition of CNRS

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Teaching on 3D medical imaging (visualization, segmentation, fusion, management, normalization) in the following tracks:

Master 2 SIBM, University of Angers-Brest-Rennes: 26h (*C. Barillot, E. Bannier, E. Caruyer, O. Commowick, I. Corouge, J.-Y. Gauvrit, S. Prima*):

C. Barillot is responsible for one semester.

J.-Y. Gauvrit is the coordinator for the Master.

Master 1 SIBM, University of Rennes: 5h (S. Prima)

Ecole Supérieure d'Ingénieur de Rennes (ESIR): 60h in medical imaging (P. Maurel)

Other topics:

Ecole Supérieure d'Ingénieur de Rennes (ESIR): 60h in general image processing (P. Maurel), 60h in algorithmics and complexity (P. Maurel) and 14h in graphical user intergace programming (B. Combès)

ENS Rennes: 24h in introduction to image processing (P. Maurel)

ISTIC - Université of Rennes 1: 12h in Software Engineering (E. Caruyer)

G. Edan: regular seminar of university Cambridge UK: “From epidemiological data to therapeutic strategies in MS” June 2015

G. Edan – Milan (Italy), Preceptorship on MRI in Multiple Sclerosis - “MRI in clinical trial” (2012-2015)

10.2.2. Supervision

PhD Hrishikesh Deshpande, Dimensionality Reduction and Statistical Learning for Computational Modeling of Natural Evolution of Brain Pathologies, Inria, from December 2012, Christian Barillot, Pierre Maurel

PhD Renaud Hédouin, Biomarker discovery in brain imaging by using diffusion MRI, Inria/Inserm, from November 2013, Christian Barillot, Olivier Commowick

PhD Yogesh Karpate, Quantitative analysis of MRI in Multiple Sclerosis in the context of the clinically isolated syndroma, INSERM, from December 2011, Christian Barillot, Olivier Commowick. Defended in September 2015.

PhD Lea Itmi, Quantitative Analysis Of Arterial Spin Labeling MRI For Robust Parametric Information Of Perfusion Maps, Inria / Siemens, from Mar 2014, Christian Barillot, Pierre Maurel

PhD Lorraine Perronnet, Neurofeedback Using Virtual Reality And Combining Eeg-Mri For Brain Rehabilitation, Inria/CominLabs Hemisfer project, from Dec 2013, Christian Barillot, Maureen Clerc (Inria Sophia-Antipolis), Anatole Lecuyer (HYBRID project), Fabien Lotte (Inria Bordeaux)

PhD Haykel Snoussi, Diffusion MRI detection of early occurring spine lesions in relapsing-remitting multiple sclerosis with late physical impairment, from Nov 2015, Christian Barillot, Gilles Edan, Emmanuel Caruyer

PhD Pierre-Yves Jonin, Relationships between context-free and context-rich memory : cognitive and neural subtrates. Inria/Inserm/CNRS from Oct 2014, Christian Barillot (co-supervisor)

PhD Maia Proisy, Perfusion in neonates and in pediatric diseases. Univ. Rennes /CHRU Rennes from Oct 2014, Jean-Christophe Ferre (supervisor)

PhD Anne Kerbrat, Quantitative MR imaging in MS for Brain and Spine. Univ. Rennes /CHRU Rennes from Oct 2014, Gilles Edan (supervisor)

10.2.3. Juries

- O. Commowick: PhD, Yogesh Karpate, Inserm, Sep. 2015
- S. Prima: PhD, Reviewer, Sophie Maingault, Université de Bordeaux, mai 2015
- C. Barillot: PhD, Committee Chair: Aurélie Emilien, Univ. Bordeaux, Dec. 2014; Charlotte Dutilleul, Univ. Toulse 3-Paul Sabatier, Jul. 2015; Nicolas Cordier, Univ. Nice-Sophia Antipolis, Nov. 2015
- C. Barillot: PhD, Reviewer: Zehan Wang, Imperial College London, Dec. 2014 ; Alia Lemkaddem, EPFL - CH, Feb. 2015; Vikash Gupta, Univ. Nice-Sophia Antipolis, Mar. 2015

10.3. Popularization

- Conference/public debate : C. Barillot "Imagerie de population: Noeud FLI-IAM", Journées Françaises de Radiologie
- Exposition : Stand démonstration Inria, Journées Françaises de Radiologie
- Exposition : Stand démonstration FLI-IAM, SFRMBM
- Press : G. Edan "Les maladies du cerveau, un enjeux majeur a relever", Ouest-France
- Popularization Web site: C. Barillot "Neurofeedback to Leverage EEG and MRI Simultaneously", lettre d'information Emergences Inria (http://emergences.inria.fr/2015/Newsletter36/L36_NEUROFEEDBACK)
- Audiovisual: "MedInria", France 3 Cote d'Azur (http://pluzz.francetv.fr/videos/jt_1920_cote_dazur.html)
- Conference/public debate : JY Gauvrit,"Les progrès de l'image du cerveau", Espace des Sciences, Rennes, March 17th

AIRSEA Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

A.Vidard was a member of the organizing committee of the Summer school “Traitement du signal et des images”, Peyresq, juin 2015

C.Prieur was a member of the organizing committee of the Journées MAS 2016, Grenoble http://mas2016.sciencesconf.org/

E. Blayo and L. Debreu have organized a mini-symposium “Mathématiques et prévision climatique" within the SMAI 2015 conference (Les Karellis, June 2015).

L. Debreu have organized the international workshop "DRAKKAR" on global ocean modelling with the NEMO system (January 2015).

F. Lemarié and L. Debreu have organized a mini-symposium entitled "Recent algorithmic developments in oceanic models : numerical schemes and test-cases for model assessment" at the European Geosciences Union General Assembly, Vienne, April 2015.

10.1.2. Scientific events selection

C.Prieur was a member of the program committee of the SAMO 2016 La Réunion http://samo2016.univ-reunion.fr/

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing activities

E. Blayo: reviewer for Mathematics and Computers in Simulation, Ocean Modelling.

L. Debreu:reviewer for Ocean Modelling, Ocean Dynamics, Geophysical Model Development.

F. Lemarié : reviewer for Ocean Modeling, Dynamics of Atmospheres and Oceans, SIAM Journal on Scientific Computing

E. Kazantsev: reviewer for International Journal for Numerical Methods in Fluids.

10.1.4. Leadership within the scientific community

E. Blayo is the chair of the CNRS-INSU research program LEFE-MANU on mathematical and numerical methods for ocean and atmosphere . http://www.insu.cnrs.fr/co/lefe

C. Prieur chairs GdR MASCOT NUM, in which are also involved M. Nodet, E. Blayo, C. Helbert, E. Arnaud, L. Viry, S. Nanty, L. Gilquin. http://www.gdr-mascotnum.fr/doku.php

L. Debreu is the coordinator of the national group COMODO (Numerical Models in Oceanography)

10.1.5. Scientific expertise

F.-X. Le Dimet is reviewer for the PRACE consortium (scientific computing)

10.1.6. Research administration

C.Prieur is an elected member of CNU20

C.Prieur is a member of CS of SMF

C.Prieur is a member of the Committee of Statistical Mathematics Group of SFdS

E.Arnaud is a member of the executive committee of IXXI (complex system institute) http://www.ixxi.fr

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: A.Vidard, Mathématiques pour l'ingénieur, 26h, L1, Universités Grenoble-Alpes, France

License: E. Arnaud, Statistics for biologist, 20h, L1, University of Grenoble, France.

License: E. Arnaud, Mathematics upgrade, 14h, L1, University of Grenoble, France.

Licence: E. Blayo, Mathématiques pour l'ingénieur, 66h, L1, UJF Grenoble.

Licence: E. Blayo, Méthodes statistiques pour la biologie, 39h, L2, UJF Grenoble.

License: M.Nodet, Outils maths pour les scientifiques et ingénieurs, 90h, L1, UJF Grenoble.

License: M.Nodet, Projet anglophone pour les L2 math info international 18h, L2, UJF Grenoble.

License: Ch. Kazantsev, Mathematiques pour les sciences de l'Ingenieur, L1, 60h UJF Grenoble.

Master: E. Arnaud, Advising students on apprenticeship, 28h, M2, University of Grenoble, France.

Master: E. Arnaud, Image processing, 18h, M2, University of Grenoble, France.

Master: E. Blayo, Méthode des éléments finis, 47h, M1, UJF Grenoble

Master: E. Blayo, Modelling and control of PDEs, 17h, M2, UJF Grenoble

Master: E. Blayo, F. Lemarié, Model coupling, 27h, M2, UJF Grenoble

Master: F. Lemarié, E. Blayo, An introduction to Schwarz domain decomposition methods, 24h, M2, Grenoble

Master: M.Nodet, Méthodes numériques, 15h, M1, UJF Grenoble

Master: M.Nodet, Méthodes inverses assimilation de données, 36h,M2, UJF Grenoble

Doctorat: E. Blayo, M. Nodet, A. Vidard, Introduction to data assimilation, 20h, University of Grenoble

Doctorat : Laurent Debreu, Formation doctorale nationale Modélisation numérique de l'océan et de l'atmosphère, 16-20 novembre 2015, Brest, France. With T. Dubos (LMD/Ecole Polytechnique, Paris), G. Roullet (Brest University), F. Hourdin (LMD/CNRS, Paris)

E-learning

Elise Arnaud, Maëlle Nodet, Mathematics for engineer, L1, University of Grenoble,

Pedagogical resources : http://tinyurl.com/youtube-mat126

10.2.2. Supervision

HDR : Laurent Debreu, Modélisation numérique de l'océan, Université Grenoble Alpes, 17 décembre 2015.

PhD : Simon Nanty, Quantification des incertitudes et analyse de sensibilité pour codes de calcul à entrées fonctionnelles et dépendantes, Université Grenoble-Alpes,15 octobre 2015, Clémentine PRIEUR, Céline Helbert

PhD in progress : Nelson Feyeux, Application du transport optimal pour l'assimilation de données images, novembre 2013, A. Vidard, M. Nodet

PhD in progress : Thomas Capelle, Calibration of LUTI models, octobre 2013, P. Sturm (EPI STEEP), A.Vidard

PhD in progress : Rémi Pellrej, Assimilation de données pour les modèles couplés, octobre 2014, A. Vidard, F. Lemarié

PhD in progress : Laurent Gilquin, Sensitivity analysis of a macroeconomic LUTI model, started in October 2013, E. Arnaud and C. Prieur

PhD in progress : Patricia Tencaliec, Approches stochastiques pour la gestion des risques environnementaux extrêmes, October 2013, Clémentine Prieur, Anne-Catherine Favre (LTHE)

PhD in progress: Mehdi-Pierre Daou, Développement d'une méthodologie de couplage multi-modèles avec changements de dimension. Validation en dynamique littorale. May 2013, E. Blayo and A. Rousseau.

PhD in progress: Charles Pelletier, Etude mathématique et numérique de la formulation du couplage océan-atmosphère dans les modèles de climat. December 2014, E. Blayo, F. Lemarié and P. Braconnot.

PhD in progress: Alexis Ropiquet, Parameter estimation for subgrid modelling, Sept.2015, C.Prieur and E. Blayo.

10.2.3. Juries

E. Blayo

- 4 May 2015 - HDR thesis of Emmanuel Witrant, University of Grenoble (president)
- 12 May 2015 - PhD thesis of Sébastien Barthélémy, University of Toulouse (reporter)
- 26 Jun 2015 - PhD thesis of Romain Casati, University of Grenoble (president)
- 30 Jun 2015 - HDR thesis of Isabelle Herlin, University Pierre et Marie Curie, Paris (examiner)
- 2 Dec 2015 - PhD thesis of Lucie Rottner, University of Toulouse (reporter)
- 17 Dec 2015 - HDR thesis of Laurent Debreu, University of Grenoble (examiner)

F. Lemarié : 4 novembre 2015 - PhD thesis of Aimie Moulin, University of Grenoble (examiner)

M. Nodet : jury de bac technologique 2015

F.-X. Le Dimet : 17 Dec 2015 - HDR thesis of Laurent Debreu, University of Grenoble (president)

10.3. Popularization

- A.Vidard has Animated the stand Inria at the exposition "Solutions - COP 21", December,9, 2015
- A.Vidard has given a Conference «Le numérique au service de l'observation et de l'anticipation des changements climatiques» at the Exposition "Solutions - COP 21", December,9, 2015
- C.Prieur has given an interview to Interctices.info https://interstices.info/jcms/p_86521/mieux-modeliser-le-climat-grace-aux-statistiques
- E. Blayo participated to a Journée numérique, at the French Senate (Paris), on Feb. 11th, 2015. http://www.senat.fr/evenement/journee_numerique_inria.html
- E. Blayo gave several outreach talks, in particular for high school students and for groups of teachers.
- M. Nodet co-organises a year-round weekly math club in two secondary schools, where pupils research open mathematical problems.
- M. Nodet organised a two-month weekly meeting at a secondary school to explain mathematical research, in particular modelling for ocean and climate.
- M. Nodet gave an outreach talk about maths and oceanic currents in a secondary school during the mathematical week 2015.
- M. Nodet wrote, with J. Ehrel, two outreach papers for Interstices about glaciology and inverse problems [32], [31].
- M. Nodet gave an outreach talk about mathematical modelling for the environment at the IREM Lille 2015 conference [33].
- Several members of the AIRSEA team have contributed to the 2015 Science Festival through an information stand entitled "Understanding oceanic and atmospheric circulations".

- Since 2010, Ch. Kazantsev is the Director of the IREM of Grenoble http://www-irem.ujf-grenoble.fr/irem/accueil/. The Institute is under rapid development now, joining about 50 teachers of primary and secondary schools of the Grenoble region and 15 university professors. They work together 16 times a year on the development of the teaching strategy for the educational community. In addition to this, IREM is the editor of two journals: "Grand N" destined to primary schools teachers and "Petit x" – to the secondary schools.
- Ch. Kazantsev and E. Blayo participate in the creation of "La Grange des maths" in Varces
- Ch. Kazantsev has organized two stages of one or two days for children 14 or 15 years old during the holidays in the framework of "MathC2+", participation in these stages for one or two animations (in calculus and in modelisation), 2x2h for each animation
- A.Vidard gave an outreach talk at the Summer school “Traitement du signal et des images”, Peyresq, juin 2015
- M. Nodet and Ch.Kazantsev are involved in an IREM group which aims to bring interdisciplinarity into secondary school curriculum and proposes activities for teachers.
- M. Nodet co-organised a two day training session for secondary and high school teachers, about modelling and mathematics for the newly created Maison Pour la Science Alpes Dauphiné.
- M. Nodet is involved in various events and groups related to pedadogy at university levels.

ANGE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

Y. Penel was involved in the organising committee of the day workshop "Low velocity flows – application to low Mach and low Froude regimes" that took place in University Paris Descartes on November 5-6 and that gathered 105 researchers.

E. Audusse and Y. Penel organised the welcome session for newly recruited researchers in mathematics on behalf of national research institutions (CNRS, Inra, Inria, SFdS, SMAI, SMF) on January 19.

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing activities

Member	Journal
E. Audusse	Ocean Modeling, Computational Geosciences, M2AN
C. Guichard	International Journal On Finite Volumes
A. Mangeney	Natural Hazards
J. Sainte-Marie	M2AN, M3AS, IJNMF, Computers & Fluids
N. Seguin	M2AN, ESAIM ProcS, SIAM Scientific Computing

10.1.3. Invited talks

Conference	Location	Month	Members involved
Avalanche and Rupture Phenomena	Inria (Nancy)	Feb.	A. Mangeney
CoToCoLa	Besancon	Feb.	J. Sainte-Marie, N. Seguin
Inria-Mexico	Mexique	June	M. Parisot
MAMERN15	Pau	June	C. Guichard
NumHyp15	Cortone (Italy)	June	N. Aïssiouene, M. Parisot, N. Seguin
AP and Multiscale methods	June	Madison (USA)	N. Seguin
CEMRACS	CIRM (Marseille)	Aug.	N. Aïssiouene, E. Audusse, Y. Penel
JAG15	Caen	Sept.	A. Mangeney
CAFFEET15	San Francisco (USA)	Sept.	J. Sainte-Marie
Algae In Silico	Sophia-Antipolis	Oct.	N. Aïssiouene
Workshop Gladys	Gard	Nov.	N. Aïssiouene
Workshop LowMach	Paris	Nov.	E. Audusse, M. Parisot
FAST	Orsay	Nov.	A. Mangeney
JILL15	LJLL (Paris)	Nov.	B. di Martino

Seminars	Date	Member
Suisse (Zürich, Davos)	19-20 Jan.	A. Mangeney
Orsay	16 Apr.	N. Seguin
Manon (LJLL)	07 May	M. Parisot
Amiens	05 Oct.	E. Audusse
Nice	12 Nov.	Y. Penel

10.1.4. Leadership within the scientific community

Organisation	People	Duty
AMIES	E. Godlewski	Member of board
CNU 26	N. Seguin	Member
EGRIN	E. Audusse	Correspondent (Paris 13)
	B. di Martino	Correspondent (Corse)
	N. Goutal	Correspondent (EDF)
	C. Guichard	Correspondent (UPMC)
	A. Mangeney	Member of board
	M. Parisot	Correspondent (ANGE)
	J. Sainte-Marie	Scientific head
SMAI	Y. Penel	Member of board

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master's degree (M2) - E. Godlewski and J. Sainte-Marie, Models and numerical methods for free surface flows, 20 hours (lectures), Univ. Pierre et Marie Curie Paris 6

Master's degree (M2) - C. Guichard, Numerical methods for nonstationary PDEs, 18 hours (example and programming classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M2) - A. Mangeney and J. Sainte-Marie, Modélisation des écoulements gravitaires et tsunamis, 40 hours (lectures and programming classes), Univ. Paris Diderot Paris 7, IPGP

Engineering school (2nd year) - E. Audusse, Hyperbolic systems, 30 hours (lectures), Univ. Paris 13

Master's degree (M1) - C. Guichard, Basis of numerical methods, 63 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M1) - A. Mangeney and J. Sainte-Marie, Dynamique des écoulements gravitaires et tsunamis, 40 hours (lectures and programming classes), Univ. Paris Diderot Paris 7, IPGP

Master's degree (M1) - N. Seguin, Mathematics, Numerical Analysis and Algorithmics, 72 hours (lectures, example and programming classes), Univ. Nantes

Bachelor's degree (L3) - N. Aïssiouene, Numerical methods for linear systems with Scilab, 36 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Engineering school (1st year) - E. Audusse, Numerical analysis for differential equations, 30 hours (example classes), Univ. Paris 13

Bachelor's degree (L3) - C. Guichard, Numerical linear algebra, 72 hours (example and programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L3) - M. Parisot, Hilbert analysis, 30 hours (lectures and example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L3) - N. Seguin, Mathematics for engineers, 37 hours (lectures and example classes), Univ. Nantes

Bachelor's degree (L2) - E. Audusse, Scientific computing, 36 hours (lectures), Univ. Paris 13

Engineering school (1st year) - Y. Penel, Partial Differential Equations, 15 hours (example classes), École Centrale Paris

Bachelor's degree (L2) - Y. Penel, Integration in 2 and 3 dimensions, 42 hours (lectures and example classes), Univ. Pierre et Marie Curie Paris 6 and Station Biologique Marine de Roscoff

Bachelor's degree (L1) - E. Nayir, Mathematics, 72 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1) - F. Wahl, Calculus, 18 hours (example classes), Univ. Pierre et Marie Curie Paris 6

E. Godlewski is the head of the "Mathematics for Industry" M.Sc. program of Univ. Pierre et Marie Curie Paris 6. We mention that E. Audusse is the deputy director of the "Applied Mathematics and Scientific Computing" program of the SupGalilee engineering school.

10.2.2. Supervision

PostDoc in progress - Pierre-Olivier Lamarre, *Optimization of the hydrodynamic regime in a raceway and lagrangian trajectories of algae*, supervised by J. Sainte-Marie (in collaboration with O. Bernard, BIOCORE), from Nov. 2015

PostDoc in progress - Erica Schwindt, *Data assimilation for an advection/diffusion equation*, supervised by J. Sainte-Marie (in collaboration with M. Boulakia, REO), from Sept. 2015

PostDoc - Vivien Desveaux, *Méthodes d'assimilation de données dans le cadre de la surveillance des agressions biologiques et chimiques*, supervised by J. Sainte-Marie (in collaboration with M. Boulakia, REO), until Aug. 2015

PhD in progress - Nora Aïssiouene, *Derivation and analysis of a non-hydrostatic Shallow water type model*, Univ. Pierre et Marie Curie Paris 6 (Inria grant), supervised by E. Godlewski and J. Sainte-Marie, from 2013

PhD in progress - Vincent Bachelet, *Granular flows and generated acoustic waves: a laboratory investigation*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with J. De Rosny and R. Toussaint), from 2015

PhD in progress - Tim Borikov, *Physical processes at play in Martian landslides*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with D. Mège), from 2012

PhD in progress - Do Minh Hieu, *Analyse mathématique et schémas volumes finis pour la simulation des écoulements quasi-géostrophiques à bas nombre de Froude*, Univ. Paris 13, supervised by E. Audusse and Y. Penel (in collaboration with S. Dellacherie and P. Omnes), from 2014

PhD in progress - Dena Kazerani, *Simulation et modélisation de problèmes à frontière libre*, Univ. Pierre et Marie Curie Paris 6, supervised by N. Seguin (in collaboration with P. Frey and C. Audiard), from 2013

PhD in progress - Hélène Miallot, *Numerical modelling of landquakes*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with Y. Capdeville), from 2015

PhD in progress - Clément Mifsud, *Analyse et approximation des systèmes de Friedrichs : application à la modélisation de l'élastoplasticité*, Univ. Pierre et Marie Curie Paris 6, supervised by N. Seguin (in collaboration with J.-F. Babadjian and B. Després), from 2013

PhD in progress - Ethem Nayir, *Approximation multi-vitesse des équations de Navier-Stokes hydrostatiques: Analyse mathématique et simulations numériques*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse, Y. Penel and J. Sainte-Marie, from 2014

PhD in progress - Amandine Sergeant-Boy, *Detection and characterisation of seismic sources generated by glaciers: numerical modelling and analysis of seismic waves*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with J.-P. Montagner, E. Stutzmann and O. Castelnau), from 2013

PhD - Maxime Farin, *Analysis of the seismic signal generated by laboratory granular flows*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with R. Toussaint and J. de Rosny), until Mar 2015

PhD - Jannes Kinscher, *Analysis of seismicity in quarries*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with P. Bernard and I. Contrucci), until Feb 2015

PhD - Philippe Ung, *Simulation, modélisation et analyse numérique pour le transport sédimentaire*, Univ. Orléans (EDF–CNRS grant), supervised by E. Audusse and Y. Penel (in collaboration with S. Cordier), until Dec 2015

M2 internship - Pauline Le Bouteiller, *Ecoute sismique et analyse statistique des éboulements sur le Piton de la Fournaise*, Ecole des Mines, supervised by A. Mangeney, Summer 2015

M2 internship - Hugo Martin, *Modélisation et simulation d'un fluide partiellement à surface libre*, Univ. Pierre et Marie Curie Paris 6, supervised by C. Guichard, M. Parisot and J. Sainte-Marie, Summer 2015

M2 internship - Jean-Luc Ralaiarisoa, *Ecoute sismique et analyse statistique des tremblements de terre liés au vêlage d'icebergs au Groenland*, IPGP, supervised by A. Mangeney, Summer 2015

M2 internship - Fabien Wahl, *Simulations de tsunamis à l'aide d'un modèle non-hydrostatique*, Univ. Pierre et Marie Curie Paris 6, supervised by A. Mangeney and J. Sainte-Marie, Summer 2015

10.2.3. Juries

Feb, PhD - A. Mangeney (referee): Noe Bernabeu (Univ. Grenoble, *Modélisation multi-physique des écoulements viscoplastiques: application aux coulées de lave volcaniques*)

Apr, PhD - J. Sainte-Marie: Xavier Lhébrard (Univ. Paris-Est, *Analyse de quelques schémas numériques pour des problèmes de shallow water*)

May, HdR - A. Mangeney (referee): Yves Le Gonidec (Institut de Physique de Rennes, *Propagation, imagerie et monitoring acoustiques : développements méthodologiques et expérimentaux pour des systèmes complexes en géosciences*)

May, PhD - J. Sainte-Marie (referee): Sébastien Barthélemy, (Univ. Toulouse, *Ensemblist data assimilation and 1D-2D hydraulic model coupling for real-time flood forecasting. Application to the "Adour maritime" hydraulic network*)

Aug, PhD - A. Mangeney (referee): Franzisca Dammeier (ETH Zurich, *Seismic characterization of rockslides using existing regional networks*)

Aug, PhD - A. Mangeney (referee): Belinda Bates (EPF Lausanne, *Basal Entrainment by Geophysical Gravity Currents: An Experimental Fluid Dynamics Approach*)

Oct, PhD - A. Mangeney (referee): Aurore Carrier (IsTerre Chambéry, *Endommagement et processus non-linéaires au sein d'un édifice volcanique pressurisé*)

Dec, HdR - E. Godlewski: C. Cancès (Univ. Pierre et Marie Curie, *Analyse mathématique et numérique d'équations aux dérivées partielles issues de la mécanique des fluides : application aux écoulements en milieux poreux*)

Dec, PhD - A. Mangeney (referee): Jordane Mathé (Univ. Blaise Pascal, Clermont-Ferrand, *Modélisation d'écoulements gravitaires fluidisés et application à la volcanologie*)

Dec, PhD - N. Seguin: Matthias Mimault (Univ. Nice–Sophia Antipolis, *Lois de conservation pour la modélisation des mouvements de foule*)

10.3. Popularization

11/06/15 - Futur en Seine (Cap Digital): B. di Martino, M. Parisot and J. Sainte-Marie were present during the numerical festival

24/09/15 - 6th Plenary Research Data Alliance (Cap Digital): N. Aïssiouene, B. di Martino, Y. Penel and J. Sainte-Marie contributed to the Inria stand

9-11/10/15 - Fête de la Science: all the members of the team run the ANGE stand to present scientific works related to water

07-10/12/15 - Solutions COP21: N. Aïssiouene, E. Nayir, M. Parisot, Y. Penel and J. Sainte-Marie participated to the exhibition at the Grand Palais to show the application of applied mathematics to climate issues

CASTOR Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events organisation

7.1.1.1. Member of the organizing committees

- Journées CASTOR, Valberg, 26-27 janvier 2015.
- Rencontre NTM (Nice-Toulon-Marseille), Porquerolles, may 2015. http://champion.univ-tln.fr/NTM/NTM2015.html
- Journées numériques, Décomposition de domaine, Librairie de calcul parallèle, Nice, april 2015. http://math.unice.fr/~minjeaud/Donnees/JourneesNumeriques_15-1/index.php

7.1.2. Journal

7.1.2.1. Member of the editorial boards

- J. Blum is in the editorial board of Journal of Scientific Computing
- J. Blum is in the scientific committee of mathematics and statistics of ISTE books

7.1.2.2. Reviewer - Reviewing activities

R. Pasquetti is reviewer for several journals including

- Journal of Computational Physics
- Computers and Fluids

J. Blum is reviewer for several journals including

- Journal of Computational Physics
- Fusion Science and Technology
- Mathematics and Computers in Simulations

7.1.3. Invited talks

- J. Blum, Journée Mathématiques X-UPS, Des problèmes à N corps aux Tokamaks, May 2015
- Holger Heumann, An enhanced approximate cloaking scheme for the conductivity problem, Mathematics for Imaging, ENS, Paris, France, October 20-24, 2015.
- Holger Heumann, Quasi-static Free-Boundary Equilibrium of Toroidal Plasma: Computational Methods and Applications, Modeling and Numerical Methods for Hot Plasmas II, Institut de Mathématiques de Bordeaux, France, October 12-14, 2015.
- Hervé Guillard, “Asymptotic theory of reduced MHD models for fusion plasmas” : Oberwolfach Workshop: Recent Developments in the Numerics of Nonlinear Hyperbolic Conservation Laws, 13 September - 19 September 2015. Oberwolfach, Germany.
- Jacques Blum, Control methods for the optimization of plasma scenarios in a Tokamak, 27th IFIP TC7 Conference, Sophia Antipolis, June 29 - July 3rd, 2015

7.1.4. Leadership within the scientific community

- J. Blum is president of thematic committee 6 (Mathematics, algoritmic and computer science) of GENCI
- J. Blum represents the University of Nice Sophia Antipolis in Alliance Nationale de Coordination pour la Recherche pour l’Energie (ANCRE).

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Ecole d'ingénieur: D. Auroux, Optimisation, 66h, M1, Polytech Nice, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: D. Auroux, Méthodes numériques, 36h, M1, Polytech Nice Sophia, Université de Nice Sophia Antipolis, France

Master: B. Faugeras, Optimisation, 18h, M1, Université de Nice Sophia Antipolis, France

Master: J. Blum, Optimisation et contrôle, 20h, M2, Université de Nice Sophia Antipolis, France

Master: J. Blum, Optimisation, 18h, M1, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: J. Blum, Commande Optimale, 37.5h, M2, Polytech Nice Sophia, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur: C. Boulbe, Analyse Numérique, 71.5h, L3, Polytech Nice Sophia Antipolis, France

Ecole d'ingenieur: C. Boulbe, Méthodes numérique - EDP, 66h, M1, Polytech Nice Sophia Antipolis, France

Licence: S. Minjeaud, Analyse Numérique, 18 h, L3, Université de Nice Sophia Antipolis, France.

Licence: S. Minjeaud, Eléments de calcul différentiel, 18 h, L3, Université de Nice Sophia Antipolis, France.

Master: S. Minjeaud, Méthodes numériques en EDP, 18 h, M1, Université de Nice Sophia Antipolis, France.

Master: B. Nkonga, Analyse Numérique, 40h, M1, Université de Nice Sophia Antipolis, France

Ecole d'ingénieur/Master: B. Nkonga, Méthode des éléments finis, 24h, M2, Polytech Nice Sophia, France

Ecole d'ingénieur/Master: B. Nkonga, Calcul Parallèle, 48h, M2, Polytech Nice Sophia, France

Licence: F. Rapetti, Analyse Numérique, 18h, L3, Université de Nice Sophia Antipolis, France

Licence: F. Rapetti, Analyse, 70h, L1, Université de Nice Sophia Antipolis, France

Licence: A. Sangam, Analyse, 40h, L1, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Mathématiques 2, 30h, L1, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Modélisation, 10h, L1, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Analyse, 50h, L2, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Méthodes Numériques et Formelles, 40h, L2, Université Nice Sophia Antipolis, France

Licence: A. Sangam, Mathématiques Appliquées, 50h, L3, Université de Nice Sophia Antipolis, France

Master: R. Pasquetti, module "Modèles de turbulence", 20 h, Masters MSC & IMAG2E, Université de Nice Sophia Antipolis, France.

7.2.2. Supervision

HdR : B. Faugeras, Modélisation, simulation numérique et problèmes inverses. Contributions en physique des plasmas de Tokamak, en écologie marine et autres travaux, Université de Nice Sophia Antipolis,12 Oct. 2016

PhD : C. Le Touze,"Etude du couplage entre modèles à phase séparée et modèles à phase dispersée pour la simulation de l'atomisation primaire en combustion cryotechnique", Université de Nice Sophia Antipolis, Décembre 2015, Hervé Guillard.

PhD in progress : J. Costa, Modeling of Elms, Sep 2012 - Sep. 2016, B. Nkonga

PhD in progress : E. Estibals, “MHD réduite: Modélisation et Simulation numérique utilisant des éléments finis stabilisés d’ordre élevés sur un maillage courbe non-structuré. Application à l’injection de glaçons et de masse dans ITER”, 15th october 2013, Hervé Guillard, Afeintou Sangam.

7.2.3. Juries

R. Pasquetti was referee for the thesis of:

- L. Cappanera, Nonlinear stabilization of magnetohydrodynamics equations and applications to multiphase flows, Université Paris-Saclay, Orsay (3-12-2015).
- R. Oguic, Une méthode multidomaine parallèlle pour les écoulements incompressibles en géométrie cylindrique: application aux écoulements turbulents soumis à rotation, Aix-Marseille Université, Marseille (19-10-2015).
- C. Mimeau, Conception and implementation of a hybrid vortex penalization method for solid-fluid porous media: application to the passive control of incompressible flows, Université de Grenoble, Grenoble (07-07-2015).

J. Blum and H. Guillard were in the HdR jury of B. Faugeras.
B. Nkonga war referee in in the PhD thesis jury of

- Jan Velechovsky (Prague),
- Fabien Rozard(Bordeaux)

B. Nkonga was in the PhD thesis jury of

- Xavier Lacoste (Bordeaux),
- Clément Le Touze(Nice),
- Matthias Mimault(Nice),
- Gauthier Brerhes(Nice).

CLIME Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

- Vivien Mallet: Aristote seminar on “Le calcul scientifique pour la ville intelligente” (scientific computing for smart cities), IFSTTAR, Champs-sur-Marne, March 2015.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

- Isabelle Herlin: ISPRS workshop on Image Sequence Analysis for Object Extraction (ISPRS Geospatial Week 2015).

9.1.2.2. Reviewer

- Isabelle Herlin: International Conference on Computer Vision and Pattern Recognition (CVPR), International Conference on Computer Vision (ICCV), International Conference on Image Processing (ICIP).

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing activities

- Julien Brajard: IEEE Transactions on Geoscience and Remote Sensing (TGRS).
- Isabelle Herlin: IEEE Transactions on Geoscience and Remote Sensing (TGRS).
- Vivien Mallet: Annals of Nuclear Energy. Environmental Science & Technology. Quaterly Journal of the Royal Meteorological Society.

9.1.4. Leadership within the scientific community

- Isabelle Herlin is a member of the Scientific Council of CSFRS (High Council for Strategic Education and Research in France).

9.1.5. Scientific expertise

- Isabelle Herlin participates to the scientific expertise on satellite observations for agriculture for CVT Allenvi.
- Isabelle Herlin is a member of the hiring committee for researchers at Inria - Rennes Bretagne Atlantique and for research directors at Inria.
- Isabelle Herlin is a member of the program committee of DIGITEO, french research cluster in science and technology of information.
- Isabelle Herlin is a member of the program committee of the interdisciplinarity mission at CNRS.
- Isabelle Herlin is a member of the Evaluation Committee at Inria.

9.1.6. Research administration

- Isabelle Herlin is a member of the Center Committee for Inria-Paris research center.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master OACOS/WAPE: Vivien Mallet; Introduction to Data Assimilation for Geophysics; 10.5 hours; M2; UPMC, X, ENS, ENSTA ParisTech, École des Ponts ParisTech; France.

Master SGE and 3rd-year class at École des Ponts ParisTech: Vivien Mallet; Air quality modeling; 9h; M2; Universities Paris Diderot- Paris 7, Paris 12 and École des Ponts ParisTech, France.

Training: Vivien Mallet; Uncertainty Quantification: Ensembles and Data Assimilation – Application to Climate and Geosciences; 5.25 hours; CERFACS; France.

9.2.2. Supervision

- HdR : Isabelle Herlin, “Images and Dynamics”, University Paris 6, June 2015.
- PhD : Paul Baudin, “Sequential prediction with ensemble aggregation: application to meteorological prediction with uncertainties”, University Paris-Sud, November 2015.
- PhD : Yann Lepoittevin, “Estimation of motion from observed structures in image sequences, University Paris 6, December 2015.
- PhD in progress: Ruiwei Chen, “Quantification d’incertitude en simulation des émissions du trafic routier”, November 2014, Vivien Mallet.
- PhD in progress : Pacôme Eberhart, “Génération automatique de codes performants et fiables pour l’assimilation de données”, September 2013, Fabienne Jezequel, Pierre Fortin and Julien Brajard
- PhD in progress : Jean Thorey, “Prévision d’ensemble du rayonnement solaire pour la production photovoltaïque du parc EDF”, November 2013, Vivien Mallet.
- PhD in progress: Raphaël Ventura, “Simulation numérique de la ville par couplage entre la modélisation et l’observation”, September 2014, Vivien Mallet.

9.3. Popularization

- Isabelle Herlin made a talk on the careers in image processing at GdR ISIS in November 2015.
- Vivien Mallet took part to a one-day introduction to Inria research at Sénat, in February 2015.
- Vivien Mallet and Raphaël Ventura took part to the UrbanDirtLab organized during the Futur-en-Seine digital festival, in June 2015.
- Vivien Mallet was auditioned by "l’Office parlementaire d’évaluation des choix scientifiques et technologiques" ("Assemblée nationale" and "Sénat") on big data and agriculture, in July 2015.

COFFEE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Journal

8.1.1.1. Member of the editorial boards

T. Goudon is founding editor and co-Editor in chief of SMAI-J. Computational Mathematics

8.1.2. Scientific expertise

FONDECYT (Chili), CERG (Hong-Kong), National Evaluation and Foresight Agency (Espagne), FRS-FNRS (Belgique), ANR and AERES/HCERES.

8.1.3. Research administration

Roland Masson is the head of the team PDE and Numerical Analysis of the laboratory J.A. Dieudonné.

Thierry Goudon is member of the Evaluation Committee of Inria. He is also member of Scientific Committees of CIRM and FSMP.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Members of the team are faculties of University Nice Sophia Antipolis and they teach in all degrees of the University.

T. Goudon is vice-President of the national competition to hire teachers (agregation de mathematiques).

8.2.2. Supervision

- PhD : Yumeng ZHANG, Modélisation et simulation des dispositifs de ventilation dans les stockages de déchets radioactifs, Université Nice Sophia Antipolis, 17/12/2015, encadrée par Roland Masson & Thierry Goudon

FLUMINANCE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Member of the conference program committees

Etienne Mémin was member of the ICCV'15 program committee

9.1.1.2. Reviewer

Cédric Herzet Reviewer for SPARS15

9.1.2. Journal

9.1.2.1. Member of the editorial boards

Etienne Mémin

- Associate editor for the Int. Journal of Computer Vision (IJCV)
- Associate editor for the Image and Vision Computing Journal (IVC)

9.1.2.2. Reviewer - Reviewing activities

Dominique Heitz: Reviewer for Exp. in Fluids, ASME J. on Heat Transfer
Cédric Herzet: Reviewer for IEEE Tr. on Signal Processing, IEEE Tr. on Information Theor
Etienne Mémin: Reviewer for Tellus-A, IEEE Im. Proc., IEEE trans. Pat. Anal. Mach. Intel. , Im. Vis. Comp., Exp. in Fluids, Nonlinear Proc. in Geophysics., Journ. of Comp. Phys, Fluid Dynamics Research.

9.1.3. Invited talks

Dominique Heitz

- Workshop on data assimilation – NIOPLEX, TU Berlin, February 2015.
- Cathala Letort XVII "L'usine agroalimentaire du futur", Oniris, Nantes, November 2015.

Cedric Herzet

- Laboratoire d'Informatique Fondamentale de Marseille (LIF), Marseille, January 2015
- Workshop "Greed is Great" of the International Conference on Machine Learning (ICML), Lille, June 2015.

Etienne Mémin

- Workshop ANR COMODO, Port Bacares september 2015
- Seminar Laboratoire de Glaciologie et Géophysique de l'Environnement (LGGE, UMR5183), Grenaoble, November 2015

9.1.4. Scientific expertise

Cedric Herzet Project reviewer for the LEFE programm of the Institut National des Sciences de l'Univers

9.1.5. Research administration

Dominique Heitz

- Responsible of the Irstea ACTA Team
- Member of Pôle Cristal scientific council

Etienne Mémin

- Responsible of the "Commission Développement Technologique" Inria Rennes
- Member of the "Commission Personnel" Inria-IRISA Rennes

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Dominique Heitz, Mécanique des fluides, 30h, niveau L2 INSA Rennes

Master : Dominique Heitz, Mécanique des fluides, 25h, niveau M1, Dep GMA INSA Rennes

Master : Cédric Herzet, Analyse de données, Mastere de Statistiques et Econométrie, 10h, niveau M1, Université de Rennes I

Master : Etienne Mémin, Analyse du mouvement, Mastere Informatique, 15h, niveau M2, Université de Rennes 1.

Master : Etienne Mémin, Vision par ordinateur , 15h, niveau M2, ESIR Université de Rennes 1.

9.2.2. Supervision

PhD: Cordelia Robinson, Variational assimilation for 3D wake reconstruction, defended 18/12/2015, supervisors: Dominique Heitz, Etienne Mémin

PhD in progress : Benoit Pinier, Scale similarity and uncertainty for Ocean-Atmosphere coupled models, started 01/10/2014, supervisors: Roger Lewandowski, Etienne Mémin

PhD in progress : Valentin Resseguier, Oceanic models under uncertainty and image assimilitation, started 01/10/2013, Bertrand Chapron (Ifremer), Etienne Mmin

PhD in progress : Pranav Chandamouli, Turbulent complex flows reconstruction via data assimilation in large eddy models, started october 2015, Dominique Heitz, Etienne Mémin.

9.2.3. Juries

Dominique Heitz

- Cordelia Robinson, Variational assimilation for 3D wake reconstruction, Université Rennes 1, Rennes, 18/12/2015, Supervisor.

Etienne Mémin

- Niels Oger, “Observation adaptative: limites de la prévision et du contrôle des incertitudes”, Université Paul Sabatier, Toulouse, 10/07/2014, President
- Xu Chen, “New formulation of optical flow for turbulence estimation”,Ecole Centrale de Lyon, 08/10/2015, Reviewer.
- Lucie Rotner, “Reconstruction de l’atmosphère turbulente à partir d’un lidar dopler 3D et étude du couplage avec Meso-NH”, Université Paul Sabatrier, Toulouse, 02/12/2015. Examiner.
- Raphael Legrand, “Utilisation des déformations spatiales en assimilation de données”, Université Paul Sabatier, 10/12/2015, Examiner
- Cordelia Robinson, “Variational assimilation for 3D wake reconstruction”, Université Rennes 1, Rennes, 18/12/2015, Supervisor.
- Dominique Heitz, “From wire to images the benefit of models to measure and reconstruct the motion of turbulent flows”, HDR Université de Rennes I, 18/12/2015, Examiner
- Nicolas Papadakis, “Transport Optimal pour le Traitement d’Images”, HDR Université de Bordeaux, 17/12/2015, Examiner.

9.3. Popularization

Cedric Herzet

- Volunteer at the "Journée sciences et musiques", Rennes 2015

LEMON Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events selection

10.1.1.1. Member of the conference program committee

Fabien MARCHE is member of the scientific committee of Advances in Numerical modeling of Hydrodynamics, 2015.

Fabien CAMPILLO is member of the scientific evaluation panels for the ANR's Generic Call for Proposals.

10.1.2. Journal

10.1.2.1. Member of the editorial board

Vincent GUINOT : Journal of Hydroinformatics.

Antoine ROUSSEAU : Discrete and Continuous Dynamical Systems, Series S.

10.1.2.2. Reviewer

Fabien MARCHE : Advances in Applied Mathematics and Mechanics, International Journal for Numerical Methods in Fluids, Journal of Applied and Computational Mathematics, Journal of Computational Physics, Journal of Scientific Computing and SIAM Journal on Scientific Computing.

Vincent GUINOT : Journal of Hydrology and Journal of Hydroinformatics.

Antoine ROUSSEAU : Applied Numerical Mathematics, International Journal for Numerical Methods in Fluids.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

F. Campillo, Stochastic modelling of ecosystems, 20 h, M2R Biostatistics, Univ. Montpellier .

F. Campillo, Object oriented programming: probabilistic modeling and statistical numerics for biology, 20 h, Doctoral lectures, Univ. Montpellier.

V. Guinot, Mécanique des fluides, 72h ETD, L3, Polytech'Montpellier, France

V. Guinot, Hydraulique à surface libre, 60h ETD, L3, Polytech'Montpellier, France

V. Guinot, Méthodes Mathématiques pour l'Ingénieur, 18h ETD, M1, Polytech'Montpellier, France

V. Guinot, Hydraulique des Réseaux, 30h ETD, M1, Polytech'Montpellier, France

V. Guinot, Mécanique des Fluides, Master SPAE, 36h ETD, M1, UMontpellier, France

V. Guinot, Transitoires hydrauliques, 54 h ETD, M1, Polytech'Montpellier, France

V. Guinot, tutorat de stages ingénieur, 15h ETD, M1, Polytech'Montpellier, France

V. Guinot, Modélisation hydraulique à surface libre 2D, 6h ETD, M2, Polytech'Montpellier, France

V. Guinot, Projet Industriel de Fin d'Etudes (PIFE), 30h ETD, M2, Polytech'Montpellier, France

V. Guinot, Tutorat de Stage de fin d'études ingénieur, 18h ETD, M2, Polytech'Montpellier, France

F. Marche, Biomaths, 72h TD., L1, Université Montpellier, France

F. Marche, Analyse numérique des EDP, 24H CM, 12H TD, 15H TP., M1, Université Montpellier, France

F. Marche, Calcul scientifique avancé, 26H CM, M2R, Université Montpellier, France

10.2.2. Supervision

PhD in progress: Mehdi Pierre Daou, *Développement d'une méthodologie de couplage multi-modèles avec changements de dimension. Validation sur un cas-test réaliste en dynamique littorale*, May 2013, Eric Blayo (EPI MOISE) and Antoine Rousseau

PhD in progress: Mohsen Chebbi, Modélisation stochastique de procédés membranaires de traitement des eaux usées. September 2014, S. Toumi (ENIT, Tunis) and F. Campillo.

PhD in progress: Oussama Hadj-Abdelkader, Filtrage particulaire pour le chemostat. September 2014, A. Hadj-Abdelkader (Univ. Tlemcen) and F. Campillo.

10.2.3. Juries

Fabien CAMPILLO : President of the jury of the associate professor (Maitre de Conférence) at the university of Bordeaux (mathematics).

Fabien CAMPILLO : Referee and jury member: M. Étienne Descamps (AgroParisTech). *Approche de modélisation Monte-Carlo individu-centrée opérant par événements discrets appliquée à un procédé d?homogénéisation d?une émulsion laitière*

Antoine ROUSSEAU : CR2 competition in Inria Sophia-Antipolis, spring 2015.

10.3. Popularization

Antoine ROUSSEAU co-authored two outreach publications in Interstices, see [17] and [18].

Antoine ROUSSEAU gave several conferences for highschool students and their teachers in France, on the topics of mathematical modeling for environmental sciences:

Fête de la Science, Oct. 2015, Genopolys Montpellier

Fête de la Science, Oct. 2015, Centre International de Valbonne

Antoine ROUSSEAU is member of the national Inria network for scientific outreach *Médiation scientifique*

Antoine ROUSSEAU gave several informal conferences in Grand Palais for the COP21 week (December 3-10, PAris)

MAGIQUE-3D Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

Hélène Barucq organized the Third Workshop of Strategic Action DIP in Pau, June 21-22, 2015, http://dip.inria.fr/workshops/third-workshop-of-the-strategic-action-dip/

Victor Péron and Hélène Barucq organized a series of courses at University of Pau in the framework of the GEAGAM project: Coding the FEM (A. Rodriguez), Seismic depth imaging (R. Baina), Discontinuous Galerkin methods for the simulation of wave propagation (J. Diaz), May 18-22, 2015

Victor Péron and Hélène Barucq organized the Workshop on Advanced Subsurface Visualization Methods: “Exploring the Earth”, Pau 26-27 May 2015, in the framework of the GEAGAM project https://sites.google.com/site/geagamnetwork/workshop.

Juliette Chabassier organized with Damien Fournier a Mini Symposium on Helioseismology at Waves 2015 conference (THE 12TH INTERNATIONAL CONFERENCE ON MATHEMATICAL AND NUMERICAL ASPECTS OF WAVE PROPAGATION), Karlsruhe, Germany, July 20-24, 2015. http://waves2015.math.kit.edu/conf_program.html#minisymp

9.1.2. Journal

9.1.2.1. Reviewer - Reviewing activities

In 2015, the members of the team have been reviewers for ESAIM : Mathematical Modelling and Numerical Analysis, New York Journal of Mathematics, SIAM Journal on Scientific Computing, SIAM Journal on Numerical Analysis, Acta Acustica united with Acustica, Journal of the Acoustical Society of America, Journal of Sound and Vibration, Journal of Computational Physics, Mathematics of Computation, Wave Motion, Geophysical Journal International, Journal of Computational Acoustics.

9.1.3. Research administration

Hélène Barucq was vice-chair of the Inria evaluation committee until June 2015. She participated to the national jury of Inria competitive selection for Senior Researchers (DR2) and to the local jury of Inria competitive selection for Young Graduate Scientists (CR2) in Bordeaux. She participated to the selection committee for Research Positions (Junior and Senior). She participated to the selection committee for an Assistant Professor position at the University of Pau. She is member of the board of the Laboratory of Mathematics of Pau and of the research federation IPRA which are both under the administrative supervision of CNRS. She is the scientific head of the project DIP.

Julien Diaz is elected member of the Inria Technical Committee and of the Inria Administrative Board. He is appointed member of the CDT (Commission de Développement Technologique) and of the Center Committee of Inria Bordeaux Sud-Ouest.

Sébastien Tordeux is elected member of the 26th section of the CNU (Conseil National des Universités).

Victor Péron is appointed member of the CJC (Commission Jeunes Chercheurs) of Inria Bordeaux Sud-Ouest.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Victor Péron, Mathématiques Appliquées, 15 Eq. TD, L1, UPPA, France

Licence : Victor Péron, Compléments d'analyse, 19,5 Eq. TD, L2, UPPA, France

Licence : Victor Péron, Calcul intégral, 19,5 Eq. TD, L3, UPPA, France

Master : Julien Diaz, Transformées, 24h Eq. TD, M1, EISTIA, France

Master : Marc Duruflé, Calcul scientifique en C++, 96h Eq. TD, M1, Bordeaux INP, France

Master : Marc Duruflé, Equations Différentielles, 20h Eq. TD, L3, Bordeaux INP, France

Master : Victor Péron et Sébastien Tordeux, Analyse numérique fondamentale, 87h Eq. TD, M1, UPPA, France

Master : Victor Péron, Analyse, 23h Eq. TD, M1, UPPA, France

Master : Sébastien Tordeux, Introduction aux phénomènes de propagation d'ondes, 38h Eq. TD, M2, UPPA, France

Master : Sébastien Tordeux, Introduction aux phénomènes de propagation d'ondes, 20h Eq. TD, M2, ENS Kouba, Algérie

9.2.2. Supervision

PhD : Jérôme Luquel, RTM en milieu hétérogène par équations d'ondes élastiques, UPPA, April 16th 2015, Hélène Barucq and Julien Diaz

PhD : Théophile Chaumont-Frelet, High Order Methods for Helmholtz Problems in Highly Heterogeneous Media, INSA Rouen, December 11th 2015, Hélène Barucq and Christian Gout (INSA Rouen).

PhD : Marie Bonnasse-Gahot, Simulation of elastic wave propagation in time harmonic domain using discontinuous Galerkin methods, Université de Nice Sophia Antipolis 15/12/2015, Julien Diaz and Stéphane Lantéri (EPI Nachos, Inria Sophia Antipolis-Méditerranée).

PhD : Julen Alvarez-Aramberri, hp-adaptive inversion of magnetotelluric measurements, University of Basque Country and UPPA, December 18th 2015, Hélène Barucq and David Pardo.

PhD in progress : Izar Azpiroz Iragorri, Approximation des problèmes d'Helmholtz couplés sur maillages virtuels , October 2014, Hélène Barucq, Julien Diaz and Rabia Djellouli.

PhD in progress : Vincent Darrigrand, Etude d'erreur pour des problèmes d'Helmholtz approchés par des techniques de Petrov-Galerkin , October 2013, Hélène Barucq and David Pardo.

PhD in progress : Aralar Erdozain, Fast inversion of 3D Borehole Resistivity Measurements using Model Reduction Techniques based on 1D Semi-Analytical Solutions, October 2013, Hélène Barucq, David Pardo and Victor Péron.

PhD in progress : Florian Faucher, Méthodes d'inversion sismique dans le domaine fréquentiel , October 2014, Hélène Barucq.

PhD in progress : Mamadou N'Diaye, "Analyse et développement de schémas temporels hybrides pour les équations hyperboliques du premier ordre", January 2015, Hélène Barucq and Marc Duruflé.

PhD in progress : Elvira Shishenina, Approximations hybrides par éléments finis et éléments virtuels discontinus pour l'élasto-acoustique, October 2015, Hélène Barucq and Julien Diaz.

PhD in progress : Vincent Popie, Modélisation asymptotique de la réponse acoustique de plaques perforées dans un cadre linéaire avec étude des effets visqueux, 2012, Estelle Piot (ONERA) et Sébastien Tordeux.

PhD in progress : Hamza Alaoui Hafidi, Imagerie ultrasonore tridimensionnelle dans les milieux hétérogènes complexes, 2015, Encadrement : Marc Deschamps, Michel Castaings, Eric Ducasse, Samuel Rodriguez (I2M), Hélène Barucq, Marc Duruflé, Juliette Chabassier (Magique 3D).

9.2.3. Juries

Hélène Barucq : Antoine Rousseau (Université de Montpellier), “Modélisation mathématique et numérique de quelques problèmes issus des sciences de l’environnement”, HDR, December 3th 2015

Julien Diaz : Stojce Nakov (Université de Bordeaux) “Solveur hybrides très haute performance et multi seconds membres pour la simulation3D en régime fréquentiel de propagation d’ondes dans des milieux avec hétérogénéïté et topographie”, PhD thesis, December 14th 2015

Victor Péron : Julen Alvarez-Aramberri (UPV-EHU, Bilbao) “hp-Adaptative Simulation and Inversion of Magnetotelluric Measurements”, PhD thesis, December 18th 2015

SAGE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organization

- J. Erhel organized with T. Faney and A. Michel, from IFPEN, an international MoMaS workshop on reactive transport (Paris, France, November 2015).

10.1.2. Scientific events selection

- J. Erhel is a member of the international advisory committee of the parallel CFD conferences (Trondheim, Norway, May 2014).
- J. Erhel was a member of the scientific committee of the international conference MAMERN 2015 (Pau, France, June 2015).
- J. Erhel was a member of the program committee of the workshop Visualization in Environmental Sciences 2015 (co-event of EuroVis 2015, Cagliari, Italy, May 2015)

10.1.3. journals: editorial Boards

- J. Erhel is member of the editorial board of ETNA.
- J. Erhel is member of the editorial board of ESAIM:Proceedings and Surveys.
- J. Erhel is the scientific coordinator of the website Interstices (since June 2012).
  See https://www.interstices.info.

10.1.4. Journals: Reviewing

- J. Erhel was reviewer for the journals ADWR, CONHYD, GMDD, LAA.
- L. Lenôtre was reviewer for the journal ETNA.
- M. Oumouni was reviewer for the journal JOMP.
- G. Pichot was reviewer for the journal Computers& Geosciences.

10.1.5. Review of proposals

- J. Erhel was reviewer for a proposal submitted to ICT15, Vienna Science and Technology fund.

10.1.6. Research administration

- É. Canot is member of the CLHSCT (Commité Local Hygiène Sécurité Conditions de Travail), of Inria-Rennes, from September 2010.
- J. Erhel is the correspondant of Maison de la Simulation for Inria Rennes.
- J. Erhel is the AMIES correspondant for Inria Rennes, from September 2015.
- J. Erhel was a member of the Inria local committee Post-Doc 2015.
- G. Pichot is responsible for the domain "environment" at IRISA, from June 2013 until August 2015.
- G. Pichot is member of the Conseil de département MAM of Polytech Lyon.
- G. Pichot was a member of the Inria local committee CORDI-S 2015.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

J. Erhel: Master M2; title: Cours de modélisation et calcul scientifique; 12 hours; INSA, Rennes, France.

É. Canot: Master M2; title: TP de modélisation et calcul scientifique; 12 hours; INSA, Rennes, France.

10.2.2. Supervision

PhD: L. Lenôtre, University of Rennes 1, November 2015, co-advisors A. Lejay (Inria Nancy) and G. Pichot, with J. Erhel.

PhD: S. Mansour, University of Rennes 1 with LIU and AUB (Beiruth, Lebanon), December 2015, co-advisors É. Canot, M. Muhieddine and N. Nassif.

PhD in progress: B. Delfino, University of Rennes 1, November 2015, co-advisors J.-R. de Dreuzy and J. Erhel.

PhD in progress: P.-M. Gibert, University of Lyon, October 2015, co-advisors D. Tromeur-Dervout and J. Erhel.

PhD in progress: M. ben Refifa, University of Tunis, October 2013, advisors R. Bouhlila and É. Canot.

10.2.3. Juries

- PhD: A. Abeduwia, University of Littoral Côte d'Opale (Calais), Mathematics, December 2015. Reviewer J. Erhel.
- PhD: C. Robinson, University of Rennes 1, Mathematics, December 2015. Committee member J. Erhel.
- HdR: A. Beaudoin, University of Poitiers, Geosciences, December 2015. Committee member J. Erhel.

10.3. Popularization

- J. Erhel is co-author of two documents published in Intersitces, about modelling ice sheet evolution and estimating the contribution of Antartica and Greenland to sea-level rise. [30], [29]
- J. Erhel was one of the coordinators of the Interstices publications devoted to climate change and COP21. She is co-author of the quiz on this subject. [28]
- J. Erhel gave a talk at the show "solutions COP21", held in Grand Palais, Paris, December 2015.
- J. Erhel contributed to the new version of the spelling book for computer science (l'informatique de A à Z), published in November 2015. She was one of the coordinators of the project and she wrote several cards.
- J. Erhel gave a talk in 180 seconds entitled "Enjeux pour les Eaux souterraines: Energie et Environnement", during the Inria scientific days, Nancy, June 2015.
- J. Erhel presented the challenges for groundwater at the meeting between Inria and Sénat, January 2015.
- L. Lenôtre gave a talk at "Lycée René Descartes de Rennes" on the diffusion phenomena and their underlying stochastic processes, February 2015.
- L. Lenôtre participated in the "Fête de la science de Rennes" at Inria stand.

SERENA Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

M. Vohralík co-organizes, together with Irène Vignon-Clementel from the project-team REO, the monthly *Modeling and Scientific Calculation Seminar* of the Inria Paris-Rocquencourt research centre, see the web page https://iww.inria.fr/modelisation_et_calcul_scientifique/en/.

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

M. Kern and M. Vohralík both served on the Scientific Committee of *SimRace, Conference on numerical methods and High Performance Computing for industrial fluid flows*http://www.rs-simrace.com/ in 2015. M. Vohralík served in the scientific committee of *ENUMATH 2015*http://enumath2015.iam.metu.edu.tr/.

10.1.3. Journal

10.1.3.1. Member of the editorial boards

M. Vohralík is a member (from December 2013) of the editorial board of *SIAM Journal on Numerical Analysis*, see http://www.siam.org/journals/sinum/board.php.

10.1.3.2. Reviewer - Reviewing activities

G. Pichot served as a reviewer for Journal of Computational Physics.

M. Kern served as a reviewer for the journals *Electronic Transactions on Numerical Analysis*, *Computational Geosciences*, *Transport in Porous Media*, and *Oil & Gas Science and Technology*.

M. Vohralík served as a reviewer for *SIAM Journal on Numerical Analysis*, *Mathematics of Computation*, *Numerische Mathematik*, *Computer Methods in Applied Mechanics and Engineering*, *SIAM Journal on Scientific Computing*, *M2AN. Mathematical Modelling and Numerical Analysis*, *Numerical Methods for Partial Differential Equations*, *IMA Journal of Numerical Analysis*, and *Comptes rendus de l'Académie des sciences (mathématique)*, as well as for *Mathematical Reviews* of the American Mathematical Society.

10.1.4. Invited talks

"The current landscape of energy a posteriori error estimators", 29 September 2015, 28th Chemnitz FEM symposium, Germany, by M. Vohralík.

"Polynomial-degree-robust a posteriori estimates in a unified setting", 14 January 2015, 8th Chilean Numerical Analysis and Partial Differential Equations Meeting, La Serena, Chile, by M. Vohralík.

"Discrete reduced models for flow in porous media with faults and barriers", 30 June 2015, SIAM Geosciences (GS15), Stanford, June 29 - July 2, 2015. This lecture was given at the award ceremony for the SIAM Geosciences Senior Career prize awarded to Jérôme Jaffré.

"Global in time domain decomposition methods for flow and transport in porous media", 16 Ocotbre 2015, ENIT LAMSIN, Tunis, M. Kern

10.1.5. Scientific expertise

J. E. Roberts is a member of the External Advisory Board for CFSES (Center for Frontiers of Subsurface Energy Security), University of Texas at Austin and SANDIA National Laboratories, Albuquerque, New Mexico.

J. E. Roberts is a member of the selection committee for recruiting professors in the department of maths of the University of Bergen, and a member of the national Norwegian committee for the promotion of professors.

M. Kern is a member of the Scientific Committee of Orap (ORganisation Associative du Parallélisme), of the Scientific Board of GDR Calcul, and of the jury and executive board of Label C3I.

10.1.6. Research administration

F. Clément is the *correspondant Inria-entreprise* of the center of Paris-Rocquencourt for AMIES (from September 2015).

G. Pichot is member of the Conseil de département MAM of Polytech Lyon.

M. Kern is the Deputy Director of Maison de la Simulation, a joint project between CEA, CNRA, Inria, Université de Paris 11, and Unversité de Versailles, focused on applications of high end computing.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, 2nd year master, Laboratoire Jacques-Louis Lions (University Paris VI), France.

Master : M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, 2nd year master, Department of Numerical Mathematics, Charles University in Prague, Czech Republic.

Doctorat: M. Kern, *Méthodes numériques pour les problèmes inverses*, 18 hours, ENIT, Tunis

Master: M. Kern, *Modélisation et simulation des écoulements de fluides dans la géosphère*, 18 hours/year, 2nd year master "Mathématiques et Applications" (parcours Analyse, Modélisation et Simulation), Université Paris Saclay, France

École d'Ingénieurs: M. Kern, *Éléments finis* (avec D. Ryckelynck), *Problèmes inverses*, 40 hours/year, 2nd year students, École Mines-ParisTech, France.

10.2.2. Supervision

PhD: L. Lenôtre, University of Rennes 1, November 2015, co-advisors A. Lejay (Inria Nancy) and G. Pichot, with J. Erhel.

PhD in progress: S. Ali Hassan, *Estimations d'erreur a posteriori et critères d'arrêt pour des solveurs par décomposition de domaine et avec des pas de temps locaux* (*A posteriori error estimates and stopping criteria for domain decomposition solvers with local time stepping*), University Paris VI, November 2013, advisor M. Vohralík, co-advisors C. Japhet and M. Kern.

PhD in progress: P. Daniel, *Adaptive multilevel solvers with a posteriori error control for porous media flows*, University Paris VI, October 2015, advisor M. Vohralík, co-advisor A. Ern.

PhD in progress: J. Dabaghi, *Modélisations adaptives par complémentarité d'apparition et de disparition de phases en milieux poreux et fracturés* (*Adaptive modeling via complementarity of phase appearance and disappearance in fractured and porous media*), University Paris VI, November 2015, advisor M. Vohralík, co-advisor V. Martin.

PhD in progress : N. Birgle, *Écoulements souterrains, méthodes numériques, et calcul haute performance*, University Paris VI, October 2012, advisor J. Jaffré, co-advisor J. E. Roberts.

PhD in progress : F. Cheikh, *Identification de failles dans un milieu poreux par une méthode d'indicateurs*, University Paris VI and University of Tunis El Manar, December 2011, advisors J. E. Roberts and H. Ben Ameur, co-advisors V. Martin and F. Clément.

PhD : E. Ahmed, *Décomposition de domaines pour quelques problèmes de transmission des fluides dans les milieux poreux : Applications en hydrogéologie et en biologie* , University of Tunis El Manar, ENIT-LAMSIN, Defended on April 30, Advisors J. Jaffré, J. E. Roberts and A. Ben Abda.

PhD in progress : M. H. Riahi, *Identification de paramètres hydrogéologiques dans un milieu poreux*, University Paris VI and University of Tunis El Manar, December 2011, advisors J. Jaffré and H. Ben Ameur.

10.2.3. Juries

F. Clément was member of the PhD thesis committee of Julien-Pierre Offret, Université Paris Ouest Nanterre La Défense (December 2nd, 2015).

M. Kern was member of the PhD thesis committees of

- Zifan Liu, Université de Versailles (January 2015);
- Thomas Applencourt, université de Toulouse (November 2015);
- Rudi Leroy, université de Lille (December 2015).

[1] [2] [3] [4] [5] [6] [7] [8] [9] [10]

STEEP Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Peter Sturm co-chaired, together with François Sillion, the program committee of the annual edition of the Inria Science Days, held in Nancy.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

Peter Sturm was a member of the program committees of the German Conference on Pattern Recognition and the Journées Jeunes Chercheurs ORASIS.

Emmanuel Prados was a member of the program committees of IJCAI 2015 CompSust track (International Joint Conference on Artificial Intelligence), Buenos Aires, Argentina, 2015.

9.1.3. Journal

9.1.3.1. Member of the editorial boards

Until 2015, Peter Sturm was member of the editorial boards of the IEEE Transactions on Pattern Analysis and Machine Intelligence, the Image and Vision Computing Journal, and the Journal on Mathematical Imaging and Vision.

9.1.4. Invited talks

Peter Sturm gave seminars at Lund University and the Université de Bourgogne.

Denis Dupré gave a conference at the special event of COP 21 called “SOLUTIONS COP21 Paris 2015” [Grand Palais, Paris, France]. Conference title: “Les outils économiques et financiers du développement durable en débat”, December 10, 2015.

Denis Dupré gave a conference at the “journées scientifiques de l’Inria” Conference title: “Les hommes maitres du chaos climatique ? Citoyens et institutions face à la simulation scientifique”, Nancy, June 18, 2015.

Emmanuel Prados gave a conference at the Séminaire In’Tech *“Inventer de nouveaux produits et services répondant à l’évolution de la société”*. Conference title: *“Outils d’analyse des pressions environnementales des territoires pour une mise en oeuvre de politiques de développement durable”*, Montbonnot, 5th of Oct, 2015.

9.1.5. Scientific expertise

Peter Sturm is member of the scientific council of the Barcelona Media foundation.

Emmanuel Prados is member the GICN (“*Groupe Interdisciplinaire sur les Contributions Nationales*”), the group of scientific experts mandated by french ministry of Sustainable Development to prepare the **climate change conference COP21** in December 2015.

9.1.6. Research administration

Since mid-2015, Peter Sturm is one of the five Deputy Scientific Directors of Inria. Until mid-2015, he was a member of the Scientific Committee of Inria Grenoble Rhône-Alpes.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

License : E. Arnaud, Mathematics for engineer, 50h, L1, University of Grenoble, France.
License : E. Arnaud, Mathematics upgrade, 14h, L1, University of Grenoble, France.
Master : E. Arnaud, Advising students on apprenticeship, 28h, M2, University of Grenoble, France.
Master : E. Arnaud, Programming project in image processing, 20h, M1, University of Grenoble, France.
Master : E. Arnaud, Image processing, 18h, M2, University of Grenoble, France.
GRETSI Summer school : E. Prados, *"Les véritables enjeux environnementaux, modélisations et outils quantitatifs"*, 3-hour course, France, 21-27th of June, 2015. http://www.gretsi.fr/peyresq15/
Pedagogical resources : Elise Arnaud, Mathematics for engineer, L1, University of Grenoble, France. (video http://tinyurl.com/youtube-mat126, all documents for problem-based learning)

9.2.2. Supervision

PhD in progress: Thomas Capelle, "LUTI Calibration as Optimization Problem and Algorithms for Solving them", 2013, Peter Sturm and Arthur Vidard (AIRSEA).
PhD in progress: Luciano Gervasoni, "Data mining for integrated land use and transportation models", 2015, Peter Sturm and Serge Fenet (LIRIS, Lyon).
PhD in progress: Laurent Gilquin, "Sensitivity analysis of a macroeconomic LUTI model", started in October 2013, E. Arnaud and C. Prieur (MOISE).
PhD in progress: Jean-Yves Courtonne, "Analyse d'impacts environnementaux et aide à la décision sur des territoires locaux, du bassin d'emploi à la région", started in Spring 2014. Denis Dupré (CERAG/UGA and STEEP/Inria) and Pierre-Yves Longaretti (IPAG/UGA and STEEP/Inria), PhD advisors.
PhD in progress: Coline Byczek, "Analyse de réseaux de services écosystémiques dans le bassin d'emploi grenoblois", started in 2012. Sandra Lavorel (LECA/UGA) and Pierre-Yves Longaretti (IPAG/UGA and STEEP/Inria), PhD advisors.
PhD in progress: Rémy Lasseur, "Modélisation et cartographie multi-échelles des faisceaux de services écosystémiques", started in Fall 2014. Sandra Lavorel (LECA/UGA) and Pierre-Yves Longaretti (IPAG/UGA and STEEP/Inria), PhD advisors.
Internship: Bérangère Deforche work objective was to characterize the potential of organic farming in the Grenoble area. The motivation of this work was to evaluate if the growing demand on this front could be supplied locally, and more generally assess the extent of potential autonomy of the Grenoble area in terms of basic staple supply. The internship included a component on the potential of urban agricultural production, which eventually became the most important part of the work due to lack of time. The results obtained in this work are disappointing, due to a lack of mastery of GIS tools on the part of the student, and her slow learning curve.
Internship: Bappa Muktar worked on the development of software Wassily for environmental-extended input-output analysis. In particular, he documented the existing code and the installation process of the various modules needed on both PC and Mac platforms. He then worded on the database and matrix computation modules and tested them with real datasets (e.g. French Input-Output table coupled with CO2 emissions by economic sector).
Internship: Solange developed animations for explaining 3D computer vision algorithms, a work related to the previous research domain of Peter Sturm who supervised this internship.
Internship: Patricio developed the `QGIS_Tranus_Reports` software, see above.

9.2.3. Juries

Peter Sturm was reviewer for the following PhD theses:

- Danda Pani Paudel, Université de Bourgogne.
- Dongming Chen, Ecole Centrale de Lyon.
- Sebastian Haner, Lund University, Sweden.

9.3. Popularization

Peter Sturm coordinated, together with Antoine Rousseau (LEMON) and the Direction for Communication, Inria's involvement in the general audience fair dedicated to public research institutions, associated with the COP21 Climate Summit held in December 2015 in Paris. Denis Dupré gave a talk at this event and he and Peter Sturm were part of Inria's delegation at the French research institution's booth, presenting the work of STEEP and Inria to the public.

Emmanuel Prados gave a conference-debat at "Marie Reynoard" High school on "Sustainable development, territorial governance and democracy" (Villard-Bonnot, France, 21th of December, 2015).

In the context of the GICN ("*Groupe Interdisciplinaire sur les Contributions Nationales*") and the climate change conference COP21, Emmanuel Prados have participated in the writing of various newspaper articles [17], [18], [15], [16].

TONUS Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Journal

10.1.1.1. Member of the editorial boards

Philippe Helluy is member of the editorial board of IJFV http://ijfv.org/

10.1.1.2. Reviewer - Reviewing activities

Emmanuel Franck participates in reviewing for

- ENUMATH 2015 Proceedings
- Comptes Rendus Mathematique

Philippe Helluy participates in reviewing for

- Mathematical reviews
- ESAIM Procs
- Computers and fluids
- Computational physics paper
- International Journal for Numerical Methods in Fluids
- SINUM
- Computer Physics Communications
- Journal of Mechanical Science and Technology

Sever Adrian Hirstoaga participates in reviewing for

- Discrete and Continuous Dynamical Systems-Series S
- ESAIM Procs.

Michel Mehrenberger participates in reviewing for

- Electronic Journal of Qualitative Theory of Differential Equations (EJQTDE)
- ESAIM Procs
- SISC
- Zeitschrift fuer Angewandte Mathematik und Physik (ZAMP)
- Abstract and Applied Analysis (AAA)

Laurent Navoret participates in reviewing for

- ESAIM Procs
- J. Comp. Phys.

10.1.2. Invited talks

Emmanuel Franck was invited at

- Congrès SMAI 2015", Mini-symposium "Numerical method for Plasma physic", Karellis, June 2015.
- "Multi-scale Numerical Methods for the Vlasov Poisson system with strong magnetic field", http://www.ipp.mpg.de/3874888/Program, October, 26th 2015.
- " Workshop JOREK ", Garching, May 2015.
- Seminar Nantes, October 2015

Philippe Helluy was invited at:

- Numkin 2015, Max Planck Institute for Plasma Physics, Munich, Germany, October 2015, http://www.ipp.mpg.de/3874888/Program
- JLESC workshop, Barcelona, June 2015, http://jlesc.bsc.es/
- Forum ORAP, November 2015, http://orap.irisa.fr/?page_id=129

Sever Adrian Hirstoaga was invited at

- the workshop Modeling and Numerical Methods for Hot Plasmas II, Bordeaux, October 12-14, 2015
- the "Séminaire d'Analyse", IRMA Strasbourg, December 10, 2015.

Michel Mehrenberger was invited at

- IFIP Nice June 30, 2015, Mini Symposium "Oscillation, Degeneracy and Controllability".

Laurent Navoret was invited at

- Séminaire LAMA, Université de Savoie
- Séminaire Calcul Stochastique, IRMA, Université de Strasbourg
- Workshop "Collective dynamics of active particles, swimmers, motile cells", IMFT, Toulouse

10.1.3. Scientific expertise

Sever Adrian Hirstoaga, expertises for:

- computational project proposal at the Swiss National Supercomputing Centre

Philippe Helluy, expertises for:

- ANR
- U.S. Army Research Office
- Defence Institute of Advanced Technology (India)
- Energy research call CNRS (France).

10.1.4. Research administration

Michaël Gutnic is member of the National Commity for Scientific Research (from september 2012).

Philippe Helluy:

- head of the "Modélisation et Contrôle" research team at IRMA Strasbourg,
- chargé de mission calcul scientifique at CNRS.

Michel Mehrenberger is partly responsible of the seminar MOCO (MOdelisation et COntrôle, IRMA, Université de Strasbourg).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: Michaël Gutnic, Mathématiques pour les sciences du vivant, 84h eq. TD, L1 Sciences du Vivant, Université de Strasbourg, France

Licence: Michaël Gutnic, Statistiques pour les biologistes, 117h eq. TD, L2 Sciences du Vivant, Université de Strasbourg, France

Licence: Philippe Helluy, Calcul scientifique, 54h eq. TD, L2 Maths, Université de Strasbourg, France

Licence: Michel Mehrenberger, Fonctions de plusieurs variables et analyse vectorielle, 30 h eq. TD, L2, Université de Strasbourg, France

Licence: Laurent Navoret, Calcul scientifique, 65 h eq. TD, L3, Université de Strasbourg, France

Licence: Laurent Navoret, Optimisation Non-Linéaire, 54h eq. TD, Cours et TD, L3 Maths-Eco, Université de Strasbourg, France

Master: Michaël Gutnic, Probabilités et Statistiques, 30h eq. TD, Formation d'ingénieur en informatique en apprentissage, Institut des Techniques d'Ingénieur de l'Industrie, Centre de Formation d'Apprentis de l'Industrie, Conservatoire national des arts et métiers, France.

Master: Philippe Helluy, Recherche opérationnelle, 45h eq. TD, ENSIIE, Université de Strasbourg, France

Master: Philippe Helluy, Contrôle Optimal, 26h eq. TD, M2, Université de Strasbourg, France

Master: Philippe Helluy, Méthode des volumes finis, 26h eq. TD, M2, Université de Strasbourg, France

Master: Philippe Helluy, Calcul scientifique, 10h eq. TD, M2 Agrégation, Université de Strasbourg, France

Master: Michel Mehrenberger, Cours avancé math fonda, 20 h eq. TD, M1, Université de Strasbourg, France

Master: Michel Mehrenberger, PIP certification Python, 13 h eq. TD, M1, Université de Strasbourg, France

Master: Laurent Navoret, PIP : certification python, 13h eq. TD, M1 Mathématiques, Université de Strasbourg, France.

Master: Laurent Navoret, Calcul scientifique, 54 h eq. TD, M2 Agrégation, Université de Strasbourg, France.

Master: Laurent Navoret, Correction de devoir, 26 h eq. TD, M2 Agrégation, Université de Strasbourg, France.

Master: Laurent Navoret, Basics in Maths, 24h eq. TD, Cours, M2 Cell Physics, Université de Strasbourg, France.

10.2.2. Supervision

PhD : Thomas Strub, "Résolution des équations de Maxwell tridimensionnelles instationnaires sur architecture massivement multicoeur", Université de Strasbourg, March 2015, Advisor: Philippe Helluy.

PhD in progress: Thi Trang Nhung Pham, "Méthodes numériques pour Vlasov", October 2012, Advisors: Philippe Helluy, Laurent Navoret.

PhD in progress: Pierre Gerhard, "Résolution des modèles cinétiques. Application à l'acoustique du bâtiment.", October 2015, Advisor: Philippe Helluy, Laurent Navoret.

PhD in progress: Bruno Weber, "Optimisation de code Galerkin Discontinu sur ordinateur hybride. Application à la simulation numérique en électromagnétisme", March 2015, Advisor: Philippe Helluy.

PhD in progress: Nicolas Bouzat, "Fine grain algorithms and deployment methods for exascale codes", October 2015, Advisor: Michel Mehrenberger, Jean Roman, Guillaume Latu.

PhD in progress: Michel Massaro, "Méthodes numériques pour les plasmas sur architectures multi-cœurs", December 2012, Advisor: Philippe Helluy.

10.2.3. Juries

Michel Mehrenberger was invited member of the jury of the PhD of Fabien Rozar (CEA Cadarache).

Philippe Helluy, PhD defence of: Lauriane Schneider (Strasbourg), Rémi Chauvin (Toulouse).

10.3. Popularization

Philippe Helluy participated to the redaction of an ONISEP brochure about the jobs related to Mathematics or computer sciences http://www.onisep.fr/Toute-l-actualite-nationale/Decouvrir-les-metiers/Mars-2015/Zoom-sur-les-metiers-des-mathematiques-et-de-l-informatique

Michel Mehrenberger is in the IREM ("Instituts de recherche sur l?enseignement des mathématiques") team "Modélisation" for the year 2015-2016.

BIOCORE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events selection

10.1.1.1. Members of the conference program committee

J.-L. Gouzé is a member of the program committee for the conference BIOMATH, held in Sofia (Bulgaria). He is in the editorial committee of the proceedings of the conference in honor of E. Benoît (La Rochelle 2013), and in the scientific committees of several summer schools.

O. Bernard is in the technical committee of the Computer Applied to Biotechnology (CAB) conferences, and of the FOSBE conference (Foundations of Systems Biology in Engineering). He is in the scientific committee of the French conference "Stic et Environnement".

10.1.1.2. Reviewers

All BIOCORE members have been reviewers for the major 2015 conferences in our field: CDC, ECC, MED,...

10.1.2. Journal

10.1.2.1. Members of the editorial board

M. Chaves is an Associated Editor of SIAM Journal on Applied Dynamical Systems (SIADS), since January 2015

10.1.2.2. Reviewers

All BIOCORE members have been reviewers for the major journals in our field: Automatica, IEEE Transactions on Automatic Control, Journal of Mathematical Biology, Mathematical Bisciences, New Phytologist,...

10.1.3. Invited talks

O. Bernard gave a lecture on control and observation of anaerobic digestion in the framework of the 14th World Congress on Anaerobic Digestion (Vina del Mar, December, 13th).

O. Bernard was invited to give a conference on microalgae at Ecole Centrale de Paris (“Biotechnological challenge”) ‘Use of microorganisms for biofuel production” (January, 22nd, 2015).

O. Bernard was invited to give a conference for the 50th anniversary of the Society for Energy from Ardeche (June, 1st, 2015).

O. Bernard gave a presentation at the EABA conference "Combining photovoltaic panels and microalgae: How to deflect the excess of solar energy to ensure optimal conditions of light and temperature for growth" (Lisbon, December, 2nd)

10.1.4. Scientific expertise

O. Bernard is a member of the scientific committee of the companies Fermentalg and BioEnTech.

J.-L. Gouzé was in several evaluation committees: Stic Amsud, INSEP...

10.1.5. Research administration

J.-L. Gouzé is in the Inria committee supervising the doctoral theses, and a member of the scientific committee of Labex SIGNALIFE of the University of Nice-Sophia-Antipolis, and of COREBIO PACA. He is a member of the board of the SFBT (French Speaking Society for Theoretical Biology).

M. Chaves is a member of the COST-GTRI (working group on International Relations at Inria's council for scientific and technological orientation). The group is charged with evaluating Inria's Associated Teams as well as some project proposals (EuroMed 3+3), and ERCIM post-docs. M. Chaves is a member of the CLHSCT (local committee for the safety of working conditions).

O. Bernard represents Inria at the ANCRE (Alliance Nationale de Coordination de la Recherche pour l'Energie), in the biomass committee. He is a member of the ADT (Technological Development Actions) at Inria.

S. Touzeau is an elected member of the scientific committee of the MIA departement at INRA (2011–2015). She is a member and a board member of the MBIA CSS (Specialised Scientific Commission), in charge of the research scientist evaluation at INRA (2011–2015). S. Touzeau was a member of a jury for the recruitment of junior research scientists at INRA in "Applied mathematics and computer science" (2 positions) and of a jury for the recruitment of a lecturer at Agroparistech in "mathematics applied to the analysis of deterministic models".

F. Grognard is a member of the NICE committee, which allocates post-doctoral grants and fundings for visiting scientists at Inria Sophia Antipolis. He is a member of the scientific committee of the doctoral school "Sciences de la Vie" at the University of Nice-Sophia Antipolis. F. Grognard is a member of the MBIA CSS since 2015.

L. Mailleret is the head of the M2P2 team (Models and Methods for Plant Protection) of ISA.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Bachelor: F. Grognard (45.5h ETD) and L. Mailleret (26h ETD), "Equations différentielles ordinaires et systèmes dynamiques", L3, 1st year Engineering in Modelling and Applied Mathematics, Polytech'Nice, Université of Nice Sophia Antipolis, France.

Bachelor: N. Bajeux (64h ETD), "Initiation to Scilab", L3, 1st year Engineering in Modelling and Applied Mathematics, Polytech'Nice, Université of Nice Sophia Antipolis, France.

Master: F. Grognard (21h ETD) and L. Mailleret (21h ETD), "Bio-Mathématiques", M1, 2nd year Engineering in Modelling and Applied Mathematics (eq. M1), Polytech'Nice, Université of Nice Sophia Antipolis, France.

Master: L. Mailleret (18h ETD) "Modélisation pour la biologie des populations et l'écologie". Université d'Oran.

Master: J.-L. Gouzé (9h ETD), M. Chaves (9h ETD), "Discrete and continuous approaches to model gene regulatory networks", Master of Science in Computational Biology (M2), University of Nice - Sophia Antipolis.

Master: J.-L. Gouzé (18h ETD), M. Chaves (12h ETD) "Modelling biological networks by ordinary differential equations", 4th year students, Génie Biologie, Polytech'Nice, University of Nice - Sophia Antipolis.

Master: O. Bernard (4.5h ETD), "Bioenergy from microalgae", M2, Master International Energy Management : alternatives pour l'énergie du futur, Ecole Nationale Supérieure des Mines de Paris, France.

Master: O. Bernard (18h ETD), "Modelling biotechnological processes", M2, Ecole Centrale de Paris, France.

Master: S. Touzeau (26.25h ETD), "Analyse de données", M1, 2nd engineering year in Génie Biologie, Polytech'Nice – Université Nice Sophia Antipolis, France.

O. Bernard together with F. Mairet and Q. Béchet supervised two projects for engineering school students. The first project involved 6 students of Ecole Nationale Supérieure des Mines de Paris (last year of engineering school, 1 week ("Combining photovoltaic panels and microalgae") and the second project involved three groups of 4 students from the Ecole Centrale de Paris (first year of engineering school), 4 months, to design a process with microalgae growing on a biofilm.

10.2.2. Supervision

PhD : I. Belgacem, "Modelling, analysis and control of biological networks", Univ. Nice, defended March 20, 2015. Supervisor: J.-L. Gouzé. [11]

PhD : H. Bonnefond, "Continuous improvement of microalgae for bioenergy production by selection pressure ", UPMC, defended December 9, 2015. Supervisors: A. Sciandra and O. Bernard. [12]

PhD : T. Morel Journel, “Stratégies d’introduction d’organismes dans un environnement spatialement structuré", Univ. Nice, defended December 9, 2015. Supervisors: E. Vercken (UMR ISA) and L. Mailleret. [13]

PhD in progress : G. Grimaud, "Controlled competition for the selection of microalgal species of interest ", since September 2012, Univ. Nice. Supervisors: O. Bernard, F. Mairet and S. Rabouille.

PhD in progress : C. Combe, "Effect of light spectrum and quality on microalgal growth ", since September 2012, UPMC. Supervisors: A. Sciandra, S. Rabouille and O. Bernard.

PhD in progress : D. Demory, "Impact of virus dynamics on microalgae mortality ", since September 2013, UPMC. Supervisors: A. Sciandra and O. Bernard.

PhD in progress : E. Rousseau, ”Plant viruses adaptation to quantitative resistance: from the study of their impact on within-host viral evolutionary dynamics to their durable management in agro-ecosystems”, since November 2012, Univ. Nice. Supervisors: F. Grognard, L. Mailleret, B. Moury, and F. Fabre (INRA Avignon).

PhD in progress : N. Bajeux, "Influence d’une densité dépendance dans les modèles impulsionnels de dynamiques des populations", since October 2013, Univ. Nice. Supervisors: F. Grognard and L. Mailleret.

PhD in progress : S. Casagranda. “Analysis and control of cell growth models”, since November 2013, Univ. Nice. Supervisors: J.-L. Gouzé and D. Ropers (Inria IBIS).

PhD in progress : S. Almeida. "Theoretical design of synthetic biological oscillators and their coupling", since October 2014, Univ. Nice. Supervisors: M. Chaves and F. Delaunay (Univ. Nice, iBV).

PhD in progress : M. Caïa, "Characterization and modelling of a mixotrophic algae - bacteria ecosystem for waste recovery", since September 2015, University Montpellier. Supervisors: J.-P. Steyer and O. Bernard.

PhD in progress : M. Haond. "Causes et conséquences des fronts de colonisation poussés", since October 2015, Univ. Nice. Supervisors: E. Vercken (UMR ISA), L. Mailleret and L. Roques (UR BioSP).

10.2.3. Juries

L. Mailleret was in the PhD jury of T. Morel Journel "Stratégies d’introduction d’organismes dans un environnement spatialement structuré", Univ. Nice, defended December 9, 2015.

O. Bernard was reviewer for the PhD of G. Van Vooren "Influence of environmental conditions on microalgae lipids profile for biodiesel production", University of Nantes, January 23, 2015.

O. Bernard was in the PhD jury of H. Bonnefond "Continuous improvement of microalgae for bioenergy production by selection pressure ", UPMC, December 9, 2015.

M. Chaves was in the PhD jury of P. Trairatphisan "Studying signal transduction networks with a probabilistic Boolean network approach", University of Luxemburg, July 16, 2015.

M. Chaves was reviewer for the PhD of Christian Breindl "Identification, analysis and control of discrete and continuous models of gene regulation networks", University of Stuttgart, Germany, December 7, 2015.

M. Chaves was in the PhD jury of Vincent Picard "Réseaux de réactions : de l’analyse probabiliste à la réfutation", Université de Rennes, December 16, 2015.

J.-L. Gouzé was reviewer for the HDR of J.J. Tewa "Modélisation et Analyse Mathématique des Systèmes Complexes : Applications en Epidémiologie, Immunologie et Ecologie", Université du Havre, November 10, 2015.

J.-L. Gouzé was in the PhD jury of P.J. Meyer "Invariance and symbolic control of cooperative systems for temperature regulation in intelligent buildings", Université Grenoble Alpes, September 24, 2015.

J.-L. Gouzé was in the PhD jury of I. Belgacem, "Modelling, analysis and control of biological networks", Univ. Nice, March 20, 2015.

F. Mairet was reviewer for the PhD of Diego De Pereda "Methods for the treatment of uncertainty in dynamical systems: Application to diabetes", Universitat Politecnica de Valencia, July 23, 2015.

F. Mairet was in the PhD jury of Micaela Benavides "Parameter identication and robust state estimation of microalgae cultures", Université de Mons, Feb. 24, 2015.

O. Bernard is in the thesis committees of N. Giordano (University of Grenoble), Valeria Villanova (University of Grenoble) and Julie Laniau (Univ. of Rennes).

S. Touzeau is in the thesis committees of David Demory (UPMC, 2013–2016) and Eric Breton (Université de Nantes, 2013–2016).

10.3. Popularization

The activities related to microalgae have generated many articles in national newspapers (Le Monde, Nice Matin, La Principauté, ...), and broadcasts on national TV (France 3, France 2, Arte). Several articles were written by the team members to explain the hurdles and potential of microalgae [77].

Biocore received an award from the Alpes-Maritimes department for its activities in sustainable development. Moreover, Biocore took part to the COP21 Inria stand, where the challenges for the use of mathematics dedicated to microalgae where presented. Biocore was involved in the "Spring of Researchers" and in the "Fête de la Science", the latter through Stefano Casagranda in the framework of his regional grant.

We have also made a short movie to explain the advantages of our supervision software ODIN and to present the pilot photovoltaic greenhouses which will be developed within the ANR Purple Sun project.

S. Touzeau, L. Mailleret, and F. Grognard gave talks on the importance of modelling during the Modelling day of UMT Fiorimed.

F. Mairet gave a talk during the Mediterranean Days (Feb 20, 2015; http://leat.unice.fr/MEDDAYS2015), to present Biocore's activities to various students from Greece, Italy, Spain, Algeria, Morocco...

P. Bernhard has given conferences in highschool Guillaume Appolinaire, in Nice, on February 5 ("Des insectes et des mathématiques", optimal foraging theory) and March 17 ("Un paradoxe en trafic automobile", Wardrop equilibrium and Evolutionary Stable Strategies in evolutionary biology), and in highschool Marcel Pagnol, in Marseille, on April 3rd ("Game theory", for a class of Social and Economic Sciences).

CARMEN Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. Member of the editorial boards

M. Potse: associate editor of Frontiers in Cardiac Electrophysiology.

9.1.1.2. Reviewer - Reviewing activities

- M. Potse: Heart Rhythm, IEEE Transactions on Biomedical Engineering, Medical & Biological Engineering & Computing, Journal of Electrocardiology.
- M. Potse is council member of the International Society of Electrocardiology.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

IUT Orsay : P.E. Bécue - Discrete Mathematics, 64h.

IUT Orsay : P.E. Bécue - Introduction to modelling and Principal Component Analysis, 64h.

Engineering school: N. Zemzemi, (How to switch from a mathematical model to a numerical solution (examples with the cardiac activity of the heart in 2D)

9.2.2. Juries

- Y. Coudière, PhD advertiser for the PhD thesis of G. Ravon obtained on 17 december 2015
- Y. Coudière, PhD advertiser for the PhD thesis of A. Davidlovic expected on the first quarter of 2016.
- Y. Coudière, Rapporteur for the PhD thesis of Rocio Cabrera Lozoya

9.3. Popularization

- G. Ravon and Y. Coudière obtained a financial support from Cap'Math for the game: "Heart Attack". It is destinated to middle and high school students to introduce mathematical modelling.
- Poster price at the CNIC 2015 for A. Djokovic.

DRACULA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

- Conference "LyonSysBio" (Lyon Systems Biology), Lyon (France), 18 - 20 November 2015 (http://lyonsysbio2015.sciencesconf.org/?lang=en). Co-organizers : Fabien Crauste and Olivier Gandrillon.
- Regular Semovi seminar series (http://www.biosyl.org/news/copy_of_semovi), 4 seminars organized in 2015. Co-organizer : Olivier Grandrillon and Fabien Crauste.
- BioSyL (http://www.biosyl.org) worshops organization. Co-organizer : Olivier Grandrillon.
- Equadiff conference, Lyon (France), 6-10 July 2015 (http://equadiff2015.sciencesconf.org/). Co-organizers : Thomas Lepoutre and Laurent Pujo-Menjouet.

9.1.2. Journal

9.1.2.1. Member of the editorial boards

- Mostafa Adimy: Journal of Nonlinear Systems and Applications (JNSA); The Scientific World Journal; Chinese Journal of Mathematics.
- Fabien Crauste: Computational and Mathematical Methods in Medicine (HPG)
- Laurent Pujo-Menjouet: Mathematical modelling natural phenomena; Frontiers Mathematics and Computers in Simulation.
- Olivier Gandrillon: BMC research Notes.

9.1.2.2. Reviewer

- Mostafa Adimy : Zeitschrift fuer Angewandte Mathematik und Physik (ZAMP); Funkcialaj Ekvacioj, Journal of Fixed Point Theory and Applications.
- Fabien Crauste : Journal of Mathematical Biology, Plos Comp Biol.
- Olivier Gandrillon : Genes, Gene, BioEssays, Nature, Journal of the Royal Society Interface, Plos Comp Biol.
- Thoms Lepoutre : Bulletin of mathematical biology, Communications in Mathematical Sciences, Networks and Heterogeneous Media, Kinetic and Related Models.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : Phillipe Michel, Analyse appliquée, 56h, L3, Ecole Centrale de Lyon.
- Licence : Phillipe Michel, Probabilités et statistique, 30h, L3, Ecole Centrale de Lyon.
- Licence: Samuel Bernard, Algèbre linéaire et matricielle, 45h, L3, INSA Lyon.
- Licence : Laurent Pujo-Menjouet, les réels et les fonctions, 36h, L1, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, suites et séries de fonctions, 36h, L1, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Equations Différentielles, 18h, L2, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Projet de l'étudiant de Licence, 14h, L2, Université Lyon 1.
- Licence : Laurent Pujo-Menjouet, Biomathématiques et modélisation, 10h, L3, Université Lyon 1.

- Licence : Laurent Pujo-Menjouet, Equations différentielles et aux dérivées partielles, 36h, L3, Université Lyon 1.
- Licence: Léon Matar Tine, Techniques mathématiques de base (TMB), 42h, L1, Université Lyon 1.
- Licence: Léon Matar Tine, Maths PMI-Analyse, 42h, L2, Université Lyon 1.
- Licence: Léon Matar Tine, Analyse Numérique, 36h, L3, Université Lyon 1.
- Master : Phillipe Michel, Algorithmes pour la décision en entreprise, 15h, M2, Ecole Centrale de Lyon.
- Master : Phillipe Michel, Méthodes variationnelles pour les EDP, 35h, M2, ECL, Ecole Centrale de Lyon.
- Master : Phillipe Michel, Systèmes embarqués collaboratifs, 14h, M1, Ecole Centrale de Lyon.
- Master: Fabien Crauste, Dynamique des populations cellulaires, 15h, M2, Université Lyon 1.
- Master: Samuel Bernard, Dynamique des populations cellulaires, 20h, M2, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Modélisation en biologie et médecine, 8h, M2, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Gestion de projet en ingénierie mathématique, 3h, M1, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Systèmes dynamiques, 66h, M1, Université Lyon 1.
- Master : Laurent Pujo-Menjouet, Projet tutoré en Mathématiques, 3h, M2, Université Lyon 1.
- Master: Léon Matar Tine, Dynamique des protéine, 18h, M2, Université Lyon 1.
- Master: Thomas Lepoutre, Dynamique des protéine, 18h, M2, Université Lyon 1.

9.2.2. Supervision

- PhD in progress : Marine Jacquier, Contribution à l'étude de modèles à retards modélisant l'impact physiologique du comportement de prise alimentaire, Université Lyon 1, October 2012, Mostafa Adimy and Fabien Crauste.
- PhD in progress : Abdennasser Chekroun, Équations différentielles et aux différences à retard pour des modèles de dynamique des cellules souches hématopoïétiques, Université Lyon 1, October 2012, Mostafa Adimy.
- PhD in progress : Loïc Barbarroux, modélisation mathématique de la réponse immunitaire chez un individu en vue d'optimiser des stratégies de vaccination, Université de Lyon 1, October 2013, Mostafa Adimy and Phillipe Michel.
- PhD in progress : Raouf El Cheikh, Multiscale modelling of the interaction between the cell cycle and the circadian clock, Université Lyon 1, October 2011, Samuel Bernard and Vitaly Volpert.
- PhD in progress : Apollos Besse, The role of tumor-immune interaction in combined treatments for chronic myeloid leukemia, Université Lyon 1, October 2014, Samuel Bernard and Thomas Lepoutre.
- PhD in progress : Alvaro Mateso Gonzales, Models for anomalous diffusion, ENS Lyon, October 2014, Thomas Lepoutre, Hugues Berry and Vincent Calvez (Alvaro is not member of Dracula team).
- PhD in progress : Flavien Duparc, Etude d'un modèle mathématiques de régulation de l'hémoglobine chez les patients dialysés, Université Lyon 1, October 2014, Mostafa Adimy and Laurent Pujo-Menjouet.
- PhD in progress : Loïs Boullu, Modélisation de la mégacaryopoïèse et applications aux maladies liées â la production des plaquettes, Université Lyon 1, October 2014, Laurent Pujo-Menjouet and Jacques Bélair (co-tutelle avec l'Université de Montréal).
- PhD in progress : Simon Girel, Contribution à la modélisation multi-échelles de la réponse immunitaire : Analyse d'équations aux dérivées partielles et identiabilité paramétrique, Université de Lyon (LabEx), Septembre 2015, Fabien Crauste

- PhD in progress : Ulysse Herbach, Modèles graphiques probabilistes pour l'inférence de réseaux de gènes, Université Lyon 1, October 2015, Olivier Gandrillon, Thibault Espinasse (ICJ) and Anne-Laure Fougères (ICJ).
- PhD in progress : Arnaud Bonnafoux, Vers une inférence automatique de réseaux de gènes dynamiques à partir de « mégadonnées » temporelles discrètes acquises sur cellules uniques, Université Lyon 1, November 2015, Olivier Gandrillon (CIFRE with the COSMO company).

9.2.3. Juries

- Fabien Crauste was reviewer and member of the PhD of Ana Jarne Munoz (Université de Bordeaux), Modeling the effect of exogenous Interleukin 7 in HIV patients under antiretroviral therapy with low immune reconstitution.
- Mostafa Adimy was reviewer and member of the PhD of Patrice Ndambomve (University of Abuja, Nigeria), Contributions to control theory of nonlinear systems and split feasibility problems.
- Mostafa Adimy was reviewer of the PhD of Abdelkarim Nidal Akdad (University of Marrakesh, Morocco), Contribution to quantitative and qualitative analysis for neutral partial functional differential equations - Existence and regularity.

9.3. Popularization

- Fabien Crauste : conference "grippe saisonnière, épidémie, pandémie : quel apport des mathématiques ?" à l'Université Ouverte, Lyon, 20 January 2015.
- Thomas Lepoutre is one of the organizer of Mathalyon (Mathematcial exhibitions in highschool with 4 researchers, 20 days of intervention in 2015).

M3DISIM Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

Philippe Moireau

- Member of the CEMRACS-2016 organizing committee
- P. Le Tallec's 60th Birthday conference

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

Dominique Chapelle

- Program committee of conference "Functional Imaging and Modeling of the Heart 2015"

10.1.2.2. Reviewer

Dominique Chapelle

- Reviewer for conference "Functional Imaging and Modeling of the Heart 2015"

10.1.3. Journal

10.1.3.1. Member of the editorial boards

Dominique Chapelle

- Member of the editorial board of journal *Computers & Structures*
- Member of the editorial board of journal *ESAIM: M2AN*

10.1.3.2. Reviewer - Reviewing activities

The members of the team reviewed numerous papers:

- D. Chapelle: Computers & Structures, CMAME, IJNME, BMMB, etc.
- P. Moireau: Computers in Biology and Medicine, ESAIM: COCV, ESAIM: M2AN
- S. Imperiale: ESAIM: M2AN, et Waves in Random and Complex Media
- A. Aalto: International Journal of Control

10.1.4. Invited talks

Philippe Moireau

- "Mechanisms of observers and observers in mechanics ", P. Le Tallec's 60th Birthday conference, Ecole Polytechnique, France

Dominique Chapelle

- Invited lecturer at International Workshop on Electroactivity of Biological Systems (Orsay Univ., November 18-19 2015)
- Seminar at CERMICS (Ecole des Ponts ParisTech, Nov. 10)

10.1.5. Leadership within the scientific community

Dominique Chapelle

- Member of the Academic Senate of FCS Paris-Saclay
- Member of the board of directors of the VPH Institute

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Bachelor: S. Imperiale, “MA102 – Analyse pour les EDP”, 12h, (L3), ENSTA ParisTech, France

Bachelor: S. Imperiale, “MA104 – Analyse complexe”, 8h, (L3), ENSTA ParisTech, France

Master: S. Imperiale, “MA2610 Calcul Scientifique – Mécanique des solides”, 6h, (M1), Central/Supelec, France

Master: P. Moireau, “MA103 – Introduction aux EDP et à leur approximation numérique”, 14h, (L3), ENSTA ParisTech, France

Master: P. Moireau, “MAP-Ann1 – La méthode des éléments finis”, 21h, (M1), ENSTA ParisTech, France

Master: P. Moireau, “MAP 411 – Approximation nume´rique et optimisation”, (M1), Ecole Polytechnique, France

Master: D. Chapelle, “Biomechanical Modeling of Active Tissues”, 18h, (M2), Université Paris-Saclay, France

Master: P. Moireau, “Biomechanical Modeling of Active Tissues”, 17h, (M2), Université Paris-Saclay, France

Master: P. Moireau, “Méthodes et Problèmes inverses en dynamique des populations”, 6h, (M2), UPMC, France

Master: D. Chapelle, lecture on biomechanical modeling in Master BME, 3h, (M2), Paris 5 and ParisTech

E-learning

Mooc: Contributor: Main teacher Emmanuel De Langre, Title: Fundamentals of Fluid-Solid Interactions, 6 weeks long, Coursera, Ecole Polytechnique, About 2000 students, Level M1

Pedagogical resources: B. Burtschell, Poromechanical modelling and application to the myocardium perfusion, video

10.2.2. Supervision

PhD in progress: Bruno Burtschell. Title: Poromechanical modelling and application to the myocardium perfusion. Started: October 2013. Supervisors: Dominique Chapelle and Philippe Moireau.

PhD in progress: Aurora Armiento [0]. Title: Inverse problems for depolymerization models. Started: October 2013. Supervisors: Marie Doumic [0] and Philippe Moireau.

PhD in progress: Federica Caforio, Mathematical and numerical modelling of elastic waves propagation in the heart. Started: November 2015. Supervisors: Sébastien Imperiale, Dominique Chapelle.

PhD in progress: Geoffrey Beck, Mathematical modelling of electrical cables network. Started: September 2012. Supervisors: Patrick Joly [0], Sébastien Imperiale.

10.2.3. Juries

- D. Chapelle was the chairman of the PhD jury of Fang Yao (Ecole Polytechnique, Nov. 25)
- D. Chapelle and P. Moireau have actively participated in the recruitment of an Ecole Polytechnique assistant professor intended to join the team (soon to become a joint team between LMS / Ecole Polytechnique and Inria). The selection process led to the recruitment of Martin Genet.

10.3. Popularization

D. Chapelle, Febr. 9th, article in “Le Figaro”: “A quoi sert de modéliser le fonctionnement du cœur ?”

P. Moireau, May 20th 2015, keynote entitled “The heart forecasting” at Créteil District Academy “Olympiade de Mathematiques” award ceremony.

[0] Mamba Team
[0] Mamba Team
[0] Poems Team

MAMBA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

L. Almeida organiser: “Mathematical modeling and new methods for dengue control” meeting in Rio de Janeiro (Brazil), June 1 and 8, 2015

J. Clairambault and V. Volpert organisers: “Workshop on hybrid and multiscale models in cell and cell population biology”, UPMC, Paris, 16-18 mars 2015, http://www.itm-conferences.org/articles/itmconf/abs/2015/02/contents/contents.html

J. Clairambault organiser: Session #70 “Mathematical models and methods to investigate heterogeneity in cell and cell population biology”, 13th ICNAAM, Rhodes, Greece, Sep 23-29, 2015

M. Tournus organiser: mini-symposium at SMAI 2015 on ‘Coagulation/Fragmentation : stochastic and deterministic approaches"

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committees

J. Clairambault, member of the scientific committee of the conference “Present challenges of mathematics in oncology and biology of cancer”, CIRM, Luminy, Dec 7-11 2015

9.1.2.2. Reviewer

J. Clairambault for Indian Control Conference 2016

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing activities

J. Clairambault in 2015 for Applicable Analysis, Bull Math Biol, BMC Biol, BMC Cancer, Cancer Research, J Theor Biol, Nonlinear Biomed Physics, Springer books, Stem Cells Intl

9.1.4. Invited talks

L. Almeida: Workshop on mathematical methods and modelling of biophysical phenomena, Cabo Frio, Brazil (March 2015); Workshop on Mathematical and Physical Methods for Biological Systems, Shanghai, China (June 2015); Workshop on biofilms modelling, Rouen (Octobre 2015); Workshop en Biomathématiques, Rabat, Maroc (Novembre 2015)

J. Clairambault: 1) Conferences “Sciences et société”, Nancy and Epinal (France), October 2015; 2) Seminar, Dept. of Mathematics, Duke University, Durham (NC), October 2015; 3) Workshop on Models in cancer therapy, WPI, Vienna (Austria), July 2015; 4) {MB}2 conference, Métabief (France), July 2015; 5) Fifth International Conference on Multiscale Modelling and Methods: Upscaling in Engineering and Medicine, Moscow, Bauman University, June 2015; 6) 15e journée “Calcul scientifique et modélisation mathématique”, Amiens (France), June 2015; 7) Seminar and courses, Dept. of Mathematics, Tlemcen University (Algeria), April 2015; 8) INCA seminar “Ciência extramuros", Rio de Janeiro, February 2015; 9) Workshop “Mathematical Methods and Modelling of Biophysical Phenomena”, Cabo Frio, Brazil, March 2015; 10) BIRS workshop “Partial differential equations and cancer”, Banff (Alberta) and Mathematical Biology Seminar, University of Alberta, Edmonton (Alberta), February 2015.

M. Doumic: plenary speaker to MPDE15, Universidade Federal Fluminense (UFF Niteroi), Brazil; invitation to minisymposia in SIAM PD15, Phoenix, December 2015, by Piotr Gwiązda; in ICIAM, Beijing, August 2015, by Agnieszka Świerczewska; in Applied Inverse Problems Conference 2015, Helsinki, by Jan-F. Pietschmann. Invitation of Magali Tournus to a minisymposium by David Bortz in SMB 2015, Atlanta, June 30-July 3, 2015.

D. Drasdo: D. Drasdo: EASL conference, 4/2015 (I) (European Association for Study in the Liver, several thousand attendees) (hepatology); Workshop Edmonton (Canada) 2/2015 (not able to come); Workshop Ohio MBI 4/2015 (cancer invasion); Bordeaux, 5/2015; Workshop at ICMS, Edinburgh, on cancer invasion (mathematical biology) 5/2015; Conference CYTO 2015 (cytology), Glasgow 6/2015 (plenary speaker); Hepatinov workshop, 12/2015 (hepatology)

N. Vauchelet: Second Mokalien Meeting, Univ Paris-Dauphine (Nov. 2015); ICIAM 2015, Beijing, China (Aug. 2015); Workshop on Mathematical and Physical Methods for Biological Systems, Shanghai, China (June 2015); Workshop on mathematical methods and modelling of biophysical phenomena, Cabo Frio, Brazil (March 2015); Working group in biomathematics, Universidade Federal Fluminense (Niteroi), Brazil (Feb. 2015).

9.1.5. Scientific expertise

J. Clairambault in 2015 for Belgian FNRS, Swiss NSF

9.1.6. Research administration

L. Almeida: member CID 51 of Comité National de la Recherche Scientifique

L. Almeida and J. Clairambault: members of the bureau of the “Interfaces pour le Vivant” doctoral programme of UPMC

D. Drasdo member of scientific leadership team of virtual liver network

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: J. Clairambault, “Modélisation de la croissance cellulaire et tissulaire”, course 2 hours, L2 Parcours Médecine-Sciences UPMC, France, January 2015

Licence: N. Vauchelet, in charge of the double major academic course in mathematics and informatics: student followup, implementation of the Summer programme

Master: L. Almeida and T. Lorenzi, International course at the University of Verona (Italy): “Phenotype-structured equations" (24h).

Master: M. Doumic, course on inverse problems and applications in population dynamics (24 hours)

Master: D. Drasdo, Mathematical Biology, UPMC: “Agent-based models of tissue organisation” (24 hours)

Master: N. Vauchelet, “Introduction to mathematical modelling of biophysical phenomena” (24 hours) at UPMC and IMPA

Doctorat: J. Clairambault, course UFF Niteroi (Rio de Janeiro), “Continuous models of cell population growth dynamics to optimise anticancer treatments”, 3 hours, February 2015

Doctorat: J. Clairambault, course Tlemcen University, “Continuous models of cell population growth dynamics to optimise anticancer treatments”, 3 hours, April 2015 Clem

9.2.2. Supervision

PhD defence: Thibault Bourgeron, “Linear and nonlinear structured population models”, UPMC, June 29, 2015, supervision by M. Doumic and B. Perthame

PhD defence: Ján Eliaš, “p53 intracellular spatio-temporal dynamics”, UPMC, September 1, 2015, [2], supervision by J. Clairambault and B. Perthame

PhD defence: Adélaïde Olivier, “Analyse statistique des modèles de croissance-fragmentation”, Paris IX-Dauphine, November 27, 2015, [3], supervision by M. Doumic and M. Hoffmann (Prof. Univ. Paris-Dauphine)

PhD defence: Cristobal Quiñinao, “Mathematical modelling in Neuroscience: collective behaviour of neuronal networks and the role of local homeoproteins diffusion in morphogenesis”, UPMC, June 2, 2015, supervision by S. Mischler, B. Perthame and J. Touboul

PhD in progress: Aurora Armiento, “Inverse problems for aggregation kinetics”, UPMC, begun September 2013, supervision by M. Doumic and Ph. Moireau (Inria Saclay, M3DISIM team)

PhD in progress: François Bertaux (since September 2011, manuscript submitted October 2015), supervision by Dirk Drasdo and Gregory Batt

PhD in progress: Noémie Boissier (since November 2013), supervision by Dirk Drasdo and Irène Vignon-Clementel

PhD in progress: Géraldine Cellière (since October 2012), supervision by Dirk Drasdo, Andrei Zinovyev and Emmanuel Barillot (Institut Curie)

PhD in progress: Sarah Eugène, “Stochasticity in nucleation dynamics”, UPMC, begun September 2013, M. Doumic and Ph. Robert (Inria Paris-Rocquencourt, RAP project-team)

PhD in progress: Casimir Emako-Kazianou, UPMC, L. Almeida and N. Vauchelet

PhD in progress: Adrian Friebel (since June 2011), supervision by Dirk Drasdo and Stefan Hoehme

PhD in progress: Ghassen Haddad, “Optimisation of cancer treatments: application to bladder cancer”, UPMC in co-tutela with ENIT Tunis, begun October 2015, J. Clairambault and S. Ben Miled (Tunis)

PhD in progress: Shalla Hanson, “Modelling evolution of interactions between cancer and immune cells in solid tumours”, UPMC in co-tutela with Duke University, begun October 2015, J. Clairambault and M. Reed (Duke)

PhD in progress: Johannes Neitsch, Univ. Leipzig (since June 2011), supervision by Dirk Drasdo and Paul Van Liedekerke

PhD in progress: Camille Pouchol, “Modelling interactions between tumour cells and adipocytes in breast cancer”, UPMC, begun September 2015, J. Clairambault, M. Sabbah, and E. Trélat

PhD in progress: Antonin Prunet, UPMC, begun October 2014, L. Almeida and M. Sabbah

PhD in progress: Andrada Quillas Maran, “Modelling early leukaemogenesis”, UPMC, begun March 2014, J. Clairambault and B. Perthame

PhD in progress: Martin Strugarek, “Structured population dynamics for transmissible diseases”, UPMC, begun October 2015, N. Vauchelet and B. Perthame

PhD in progress: Cécile Taing, UPMC, begun October 2014, A. Lorz and B. Perthame

9.2.3. Juries

- J. Clairambault: Arnaud Poret, PhD defence, Jul 1, 2015, Lyon I (Computational biology) *member of the jury*
- J. Clairambault: Ján Eliaš, PhD defence, Sep 1, 2015, UPMC (Applied mathematics) *supervisor*
- M. Doumic: M. Doumic: Ján Eliaš, PhD defence, Sep 1, 2015, UPMC (Applied mathematics) *member of the jury*,
- M. Doumic: Adélaïde Olivier, PhD defence, Nov 27, 2015, Paris IX-Dauphine (Applied mathematics) *supervisor*,
- M. Doumic: Thibault Bourgeron, PhD defence, Jun 29, 2015, UPMC (Applied mathematics) *supervisor*

9.3. Popularisation

- Article J. Clairambault, “My personal journey in mathematical biology and medicine”. Society for Mathematical Biology Newsletter 28(1):11-12, January 2015 [36], http://www.smb.org/publications/newsletter/vol28no1.pdf
- Conferences “Sciences et société”, J. Clairambault, “Comment décrire et optimiser l’action des médicaments contre le cancer”, https://numerique.univ-lorraine.fr/node/513. IUT Nancy, October 8 and IUT Epinal, October 9, 2015.

MODEMIC Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

The team has co-organized with UMR Eco& Sols a one-week Research School on resources-consumers models, in September 2015 (see https://team.inria.fr/modemic/fr/francais-ecole-chercheur-modeles-ressources-consommateurs/). The objectives of the school were

- filling the gap between lectures on dynamical population models given in theoretical ecology and the ones given in bioprocess or biochemical engineering,
- gathering biologists from different application fields (food fermentation, farming, marine ecosystems...) and mathematicians, about models that couple biotic and abiotic compartments.

Another similar school is scheduled in 2016, and we plan to propose later a methodological network on this subject.

9.1.2. Scientific events selection

9.1.2.1. Reviewer

European Control Conference, IEEE Conference on Decision and Control, International Conference on System Theory, Control and Computing, Mediterranean Conference on Control and Automation.

9.1.3. Journal

9.1.3.1. Reviewer - Reviewing activities

Applied Mathematical Modelling, Automatica, Biotechnology & Bioengineering, Continuous and Distributed Systems, Computational and Applied Mathematics, European J. of Control, J. of Dynamical and Control Systems, J. of Process Control, J. of Membrane Science, Mathematical Biosciences and Engineering, SIAM J. on Optimization & Control.

9.1.4. Invited talks

Alain Rapaport has been invited to give a plenary session at the next CMPDE'16 (Conference in Mathematical Population Dynamics and Epidemiology), Marseille, Sep 2016.

9.1.5. Scientific expertise

Jérôme Harmand has been a member of the selection commitee for the recutement of a Junior Professor ("Maître de Conférences") at University Montpellier.

Alain Rapaport has been a member of the HCERES evaluation panel of the CHRONO-ENVIRONNEMENT research unit, Jan. 2016.

9.1.6. Research administration

J. Harmand is member of the steering committee of the Inra meta-program 'MEM' (Metagenomics of Microbial Ecosystems), and member of the INRA evaluation committee "commission scientifique spécialisée" STEA.

A. Rapaport is member of the scientific committee of BIOS dept. of CIRAD, and is member of the scientific committee of Ecotechnologies department of Irstea.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Engineering degree

B. Cloez and A. Rapaport, “Introduction à la modélisation”, 12 hours, 1st year, SupAgro Montpellier.

Master

T. Bayen and A. Rapaport, “Commande optimale: conditions nécessaires et suffisantes”, 21 hours, Master 2R ’MANU’ (Modélisation et Analyse Numérique), Univ. Montpellier.

PhD

T. Bayen and A. Rapaport have proposed a new doctoral module on control, observation and optimization tools for modelling (24 hours) that will be launched in March 2016 at the Doctoral School ’I2S’ (Information, Structures, System), Univ. Montpellier.

9.2.2. Supervision

Guilherme Pimentel

PhD: Modélisation dynamique, analyse et supervision d’un réacteur membranaire.

cotutelle Univ. Montpellier II/Univ. Mons (Belgique), defended in Feb. 2015.

Advisors: A. VandeWouver (Univ. Mons) and A. Rapaport.

Sonia Hassam

PhD: Réduction de modèles biotechnologiques : application à la digestion anaérobie.

Univ. Tlemcen, defended in Dec. 2015.

Advisors: B. Cherki (Univ. Tlemcen) and J. Harmand.

Amel Ghouali

PhD: Analyse et commande optimale d’un bioréacteur de dépollution des eaux usées

cotutelle Univ Montpellier II/Univ. Tlemcen (Algeria), defended in Dec. 2015.

Advisors: J. Harmand and T. Sari (UMR ITAP, Montpellier).

Walid Bouhafs

PhD in progress: Commande optimale des réacteurs biologiques séquentiels discontinus.

ENIT (Tunis), since 2010.

Advisors: N. Abdellatif (ENIT-LAMSIN, Tunis), F. Jean (ENSTA) and J. Harmand.

Victor Riqueleme

PhD in progress: Commande optimale pour la préservation de ressources hydriques exploitées.

cotutelle Univ. Montpellier II/Univ. Chile, since Sept. 2013.

Advisors: H. Ramirez (Univ. Chile) and A. Rapaport.

Alejandro Rojas-Palma

PhD in progress: Etude de quelques problèmes dans la modélisation et l’optimisation de bioprocédés.

cotutelle Univ. Montpellier II/Univ. Chile, since Sept. 2014.

Advisors: H. Ramirez (Univ. Chile) and A. Rapaport.

Yessmine Daoud

PhD in progress: Analyse de modèles de la digestion anaérobie : application à l’optimisation de la production du biogaz.

cotutelle ENIT (Tunis)-Univ. Montpellier II, since sep. 2014.

Advisors: N. Abdellatif (ENIT, Tunis) and J. Harmand.

Zeyneb Khedim

PhD in progress: Modélisation et contrôle de la digestion anaérobie : vers une meilleure prise en compte des phénomènes d'inhibition.

cotutelle Univ. Tlemcen - Univ. Montpellier II, since nov. 2014.

Advisors: B. Benyahia (Univ. Tlemcen) and J. Harmand.

Anne Bisson

PhD in progress: Modélisation probabiliste du fonctionnement d'écosystèmes considérés comme des assemblages de communautés.

Univ. Montpellier II, since Dec. 2014 until Sep 2015

Advisors: B. Jaillard (UMR Eco & Sols, Montpellier) and A. Rapaport.

Maha Hmissi

PhD in progress: Contribution a l'élaboration d'un modèle de simulation d'un procédé de biomethanisation- Application a la digestion des boues résiduaires et au prétraitement d'un effluent industriel

ENIT, Tunsia, since 2011

Advisors: Hedi Shayeb (ENIT) and J. Harmand

Nesrine Kalboussi

PhD in progress: Détection précoce et contrôle du colmatage dans les réacteurs à membranes

INSAT, Tunisia, since 2014

Advisors: Nihel Benamar (INSAT) et J. Harmand

The team has supervised MsC and Engineering School internships [50], [44].

9.2.3. Juries

S. Martin. "D'oxymore en oxymore : du développement durable au contrôle complexe." Habilitation à diriger des recherches, Univ. B. Pascal (Clermont-Ferrand), Jan 2015 (referee : A. Rapaport).

J. Qian. "Identification paramétrique en boucle fermée par une commande optimale basée sur l'analyse d'observabilité." Thèse de doctorat, Univ. C. Bernard (Lyon), Sep 2015 (examinator : A. Rapaport).

N. Lebaz "Modélisation de l'hydrolyse enzymatique de substrats lignocellulosiques pat bilan de population" Thèse de Doctorat, Université Toulouse, Sep 2015 (referee : A. Rapaport).

A. Hammoudi "Modélisation et analyse mathématique de la dynamique du carbone organique dans le sol" Thèse de Doctorat, Université Montpellier, Sep 2015 (examinator : A. Rapaport).

M. Diaby "Analyse globale de quelques modèles épidémiologiques: application à des modèles de la bilharziose" Thèse de Doctorat, Université Gaston Berger (Saint-Louis du Sénégal), Jan 2016 (referee : A. Rapaport).

Monc Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Chair of conference program committees

- S. Benzekry: member of the scientific committee of the “Journées de modélisation BioMathématique de Besançon" (http://mb2.univ-fcomte.fr/).

9.1.2. Journal

9.1.2.1. Member of the editorial boards

- Th. Colin - SIAM News, Mathematical Biosciences and Engineering, SMAI Mathématiques et Applications

9.1.2.2. Reviewer - Reviewing activities

- S. Benzekry - biomathematical modeling journals: Journal of Theoretical Biology, Mathematical Biosciences, Bulletin of Mathematical Biology, Theoretical Biology and Medical Modeling, Mathematical Biosciences and Engineering, Journal of Biological Informatics, Journal of Biological Systems, ESAIM:Proc, Mathematics and Computers in Simulation; and medical/biological journals about cancer: Clinical Pharmacokinetics, BMC Cancer
- C. Poignard - SIAM Journal on Mathematical Analysis, IEEE Trans on Mag, J. Math. Biology, J. Theoretical Biology
- O. Saut - IEEE Trans. Med. Imaging, PLOS Computational Biology, Medical Image Analysis, Nature Comm.

9.1.3. Invited talks

- Th. Colin - Congrès de la société Francophone de Biologie Théorique (Poitiers, June 2015), Present challenges of mathematics in oncology and biology of cancer (CIRM, Dec 2015).

9.1.4. Leadership within the scientific community

- O. Saut is the head of the CNRS GDR 3471 Metice (http://metice.math.cnrs.fr).

9.1.5. Scientific expertise

- O. Saut is an export for the French Ministry of Research (PHC and EGIDE programs)

9.1.6. Research administration

- C. Poignard is elected member of the Inria evaluation committee.
- O. Saut is a member of the Steering Committee of Labex TRAIL (http://trail.labex.u-bordeaux.fr).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : T. Michel, *Travaux encadrés de recherche*, 41h, L3, ENSEIRB-Matmeca, France

Licence : T. Michel, *TD Probabilités/Statistiques*, 32h, L3, ENSEIRB-MATMECA, France

Licence : T. Michel, *Harmonisation Maths (cours-TD Séries, Intégrales)*, L3, ENSEIRB-MATMECA, France

Licence : C. Poignard, *TD Équations Différentielles Ordinaires*, 30h, L3, ENSEIRB-Matmeca, France

Licence : E. Baratchart, *Initiation au calcul scientifique*, 64h, L3, ENSCBP, France

Licence : O. Gallinato, *Méthodes numériques linéaires*, 64h, L3, Université de Bordeaux, France

Licence : G. Lefebvre, *Mathématiques pour les sciences de l'environnement*, 48h, L1, Université de Bordeaux, France

Licence : G. Lefebvre, *Mathématiques et représentation des phénomènes physiques*, 35h, L1, Université de Bordeaux, France

Licence : G. Lefebvre, *Fondamentaux pour les mathématiques et l'informatique*, 35h, L1, Université de Bordeaux, France

Licence : S. Benzekry, *Equations Différentielles*, 20h, L3, ENSEIRB-MATMECA, France

Licence : A. Collin, *TD Equations Différentielles*, 20h, L3, ENSEIRB-MATMECA, France

Master : C. Poignard, *Modélisation électromagnétique des cellules*, 36h, M2, Université Bordeaux, France

Master : C. Poignard, *CM-TD Analyse Numérique*, 50h, L3, Formation SC - ENSCPB, France

Master : O. Saut, *TD Analyse des Equations aux dérivées partielles*, 30h, M1, ENSEIRB-Matmeca, France

Master : A. Collin, *TD Analyse des Equations aux dérivées partielles*, 30h, M1, ENSEIRB-MATMECA, France

Master : O. Saut, *TP C++*, 44h, M1, ENSEIRB-Matmeca, France

Master : A. Collin, *TP C++*, 44h, M1, ENSEIRB-MATMECA, France

DAEU-B : P. Berment, *Mathématiques pour le DAEU-B*, 64h, DAEU-B, Université de Bordeaux, France

9.2.2. Supervision

PhD : J. Jouganous, Lung metastases growth modeling and simulation, Université de Bordeaux, 23rd Sep 2015

PhD : G. Lefebvre, Modeling and analysis of tumor heterogeneity during treatments resistance: case of GIST liver metastases, Université de Bordeaux, 3rd Dec 2015

PhD in progress : P. Berment, Mathematical modelling evaluating radiotherapy outcome for colorectal tumor with Pet Scan, Oct 2013, Thierry Colin and Olivier Saut

PhD in progress : E. Baratchart, Quantitative study of the dynamics and spatial aspects of metastatic development using mathematical models, Dec 2012, S. Benzekry, Th. Colin and O. Saut

PhD in progress : M. Deville, Modeling of electroporation and gene transfection across tissue. Theoretical and numerical aspects., Sep 2014, C. Poignard and R. Natalini (IAC, CNR Roma)

PhD in progress : O. Gallinato, Invasive process modeling of the tumor metastatic cells, Nov 2013, C. Poignard and T. Suzuki (Osaka University)

PhD in progress : T. Kritter, Primary tumors modelling with a view to the gliomas and adenocarcinomas study, Sep 2015, C. Poignard and O. Saut

PhD in progress : T. Michel, Analysis of mathematical growth tumor models, Sep 2013, C. Poignard and Th. Colin

PhD in progress : A. Perreti, Anti-angiogenic traitements modeling using medical imaging, Oct 2014, Th. Colin and O. Saut

9.2.3. Juries

- O. Saut was a reviewer of the PhD of Baptiste Bedessem "Influence des contraintes environnementales (mécaniques, stérique, hypoxique, acidité) sur la durée du cycle cellulaire dans un contexte tumoral Approche par la modélisation computationnelle et par l'expérimentation", Univ. Grenoble, Oct 2015.
- O. Saut was a reviewer of the PhD of Joris Costes "Développement de méthodes de résolution d'équations aux dérivées partielles : du schéma numérique à la simulation d'une installation industrielle", ENS Cachan, June 2015.

9.3. Popularization

- C. Poignard gave a lecture at IREM "Des décharges électriques contre le cancer" (April 2015)
- O. Saut is a regular speaker at Entretien de l'Excellence (http://www.lesentretiens.org)
- O. Gallinato gave a lecture at "la nuit des chercheurs" (Sep 2015)
- P. Berment is participating at a "Math en jean" project with the "collège Chambéry" of Villenave d'Ornon since December 2015
- A. Perreti and C. Perier represented Inria to the Aquitec forum (Jan 2015)
- S. Benzekry gave an interview to "radio campus" in June 2015 (http://www.c-yourmag.net/article/2015-06-03/il-modelise-levolution-des-tumeurs-avec-les-mathematiques-16763)

MYCENAE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of the organizing committees

- Reprosciences 2015, April 13-15, Rennes, co-organized by Frédérique Clément, Yves Combarnous, Florian Guillou, Joëlle Cohen-Tannoudji and Olivier Kah.
  2 oral presentations were given by the team
  1. Aymard B, Clément F, Monniaux D, Postel. *Multiscale modeling of terminal folliculogenesis*.
  2. Clément F, Monniaux D, Michel P, Stiehl T.*Mathematical model of the basal follicular development*
- "Modeling in Cell and Developmental Biology", ITMO BCDE annual workshop. Dec 1st, Paris, co-organized by Frédérique Clément, Kaurent Héliot, Nadine Peyrieras and Sylvie Schneider-Maunoury. 3 posters were presented by the team
  1. Fernández-García S, Desroches M, Krupa, Vidal A, de Vico Fallani F, Clément F. *Modeling ionic and secretory rhythms in adult and embryonic neural networks with multiple time scale dynamical systems.*
  2. Köksal Ersöz E, Vidal A, Clément F. Complex oscillatory rhythms in neurohormone secretion : the instance of the GnRH neurosecretory system.
  3. Postel M, Karam A, Latbi M, Pezeron G, Tran L, Clément F, Schneider-Maunoury S. *Designing a mathematical model of the dynamics of progenitor cell populations in the mouse cerebral cortex.*

  Organization of mini-symposia at the SIAM Conference on the Application of Dynamical Systems May 17-21, SnowBird
  - Mathieu Desroches co-organized (with Morten Brøns) the *Model Reduction and Epsilon-free Methods in Singular Perturbation Problems* minisymposium
  - Jonathan Touboul co-organized (with Zack Kilpatrick and Bard Ermentrout) the *Stochastic neuronal dynamics* minisymposium

  Thematic sessions organized within the framework of the CIRB
  - Troisième journée "Biologie & Mathématiques sur la Montagne", November 4th, 2015, co-organization Jonathan Touboul Amaury Lambert and Alain Prochiantz
  - Colloquium *Mathematics of the brain*, Dec. 8th 2015, co-organization Jonathan Touboul and Khashayar Pakdama

8.1.2. Journal

8.1.2.1. Member of the editorial boards

Jonathan Touboul is Associate Editor of *PloS One* and *Frontiers in Neuronal Circuits*

8.1.2.2. Reviewer - Reviewing activities

Electronic Journal of Probability, Physica D, Frontiers in Neuroscience, Journal of Statistical Physics, Mathematical Biosciences, Mathematics and Computers in Simulation, Nonlinear Dynamics, Nonlinearity, PloS Computational Biology, SIAM Journal on Applied Dynamical Systems, SIAM Journal on Applied Mathematics

8.1.3. Scientific expertise

Frédérique Clément belongs to the expert board of the BCDE (Cell Biology, Development and Evolution) ITMO (Multi OrganizationThematic Institute) of the French National Alliance for Life and Health Sciences Aviesan.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

M. Desroches

M1 course on "Mathematical and Computational Neuroscience" as part of the Master program in Bioinformatics (BIM) of the University Pierre et Marie Curie (UPMC, Paris)
This teaching has been organised over a five-week period (January-February 2015) with a total of 30 hours, including lectures, example classes and computer labs (2 hours per week each). This first half of the course was focused on an introduction to mathematical slow-fast models of spiking and bursting neurons using bifurcation theory, slow-fast dissection and numerical analysis (simulation and continuation) with the software package XPPAUT.

8.2.2. Supervision

Tanguy Cabana, Limits of randomly connected networks and their dynamics, since September 2013, Université Pierre & Marie Curie (ED386), supervisors: Raphaël Krikorian, Jonathan Touboul and Gilles Wainrib

Yi Cui, Role of Pax6 in neurodevelopment: experiments and models, since September 2014, Université Pierre & Marie Curie (ED158), supervisors: Jonathan Touboul, Alain Prochiantz and Alessandra Pierani

Elif Köksal Ersoz, Synchronization of GnRH neurons: a multiscale mathematical study, since November 2013, Université Pierre & Marie Curie (ED386), supervisors: Frédérique Clément and Jean-Pierre Françoise, with the involvement of Mathieu Desroches.

Lucile Megret, Mathematical analysis of complex oscillations in models with multiple time scales, since October 2013, Université Pierre & Marie Curie (ED386), supervisors: Jean-Pierre Françoise and Frédérique Clément, with the involvement of Mathieu Desroches.

Kim Long Tran, Reduction and calibration of mutiscale models for structured cell populations, since October 2014, Université Pierre & Marie Curie (ED386), supervisors: Marie Postel and Frédérique Clément.

Luis Carlos García del Molino, Dynamics of randomly connected networks and spectral theory of random matrices, Université Denis Diderot (ED393), October 1st, supervisors: Khashayar Pakdaman and Jonathan Touboul.

Cristóbal Quiñinao, Mathematical modeling in Neuroscience: collective behavior of neuronal networks & the role of local homeoproteins diffusion in morphogenesis. Université Pierre & Marie Curie (ED386), June 2nd, 2015, supervisors: Benoît Perthame, Stéphane Mischler (CEREMADE) and Jonathan Touboul.

Mérina Latbi, Modélisation mathématique de la neurogenèse corticale, Centrale Lyon and Master M2 Maths en action (Lyon 1), co-supervisors Frédérique Clément & Marie Postel.

8.2.3. Juries

Jonathan Touboul participated in the selection committee of the Bernstein Award for Computational Neuroscience (BPCN)

Frédérique Clément participated in the admission committee of the Inria Senior Researcher (DR2) open competition

8.3. Popularization

- *The hipster effect: when anticonformists all look the same*. Popularization on the synchronization of random elements inspired from a simplification of brain dynamics. International press coverage in scientific (Science, AMS news, Science et Vie,...) and general information journals (Washington post, JDD, Le soir,...)
- *La recherche sur la reproduction animale et humaine*. Booklet edited by GdR REPRO, including an interview of Alexandre Vidal and a dedicated chapter on "Reproduction, biomathe´matiques et bioinformatique"

NUMED Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events organisation

7.1.1.1. General chair, scientific chair

Emmanuel Grenier: scientific chair: conference on tumor modeling, Marseille, december 2015.

7.1.1.2. Member of the organizing committees

- Vincent Calvez and Paul Vigneaux: Co-organizers of the maths seminar (since September 2008) Modelling, PDE and Scientific Computing, joint between Institut Camille Jordan and UMPA.
- Alvararo Mateos Gonzalez, Nils Caillerie: phD student seminar (Lyon I - ENSL).

7.1.2. Scientific events selection

7.1.2.1. Reviewer

Vincent Calvez is reviewever for the Deutsche Forschungsgemeinschaft (DFG).

7.1.3. Journal

7.1.3.1. Member of the editorial boards

Vincent Calvez: Journal of Mathematical Biology (Springer)

7.1.3.2. Reviewer - Reviewing activities

- Vincent Calvez is reviewer for Comm. Part. Diff. Eq. (CPDE), J. Comp. Phys., J. Funct. Anal., J. Math. Biol., Nonlinearity, Duke Math. J.
- Paul Vigneaux is reviewer for Journal of Computational Physics, Elsevier ; Journal of Scientific Computing, Springer ; ESAIM: M2AN, Mathematical Modelling and Numerical Analysis ; International Journal for Numerical Methods in Fluids, Wiley ; Computers & Fluids international journal, Elsevier ; ZAMP, Springer (Zeitschrift fuer Angewandte Mathematik und Physik – J. of Appl. Math. and Physics) ; Biomicrofluidics American Institute of Physics

7.1.4. Invited talks

- Alvaro Mateos Gonzalez: Colloque Interactions 2015 (Grenoble)
- Thibault Bourgeron: Journées EDP Rhône Alpes Auverge, Clermont-Ferrand, november 2015
- Thibault Bourgeron: Modelling Seminar in Biology, ENS Lyon, october 2015
- Paul Vigneaux: CEMRACS 2015 "Coupling Multi-Physics Models involving Fluids". Small scale fluid dynamics, interfaces and numerics. PhD lecture at the 20th CEMRACS Summer School. July 20 - August 28, 2015. CIRM, Marseille.
- Paul Vigneaux: International Workshop on Intracranial Tumors Modeling. Bordeaux, France. September 21-22, 2015. Invited speaker.
- Paul Vigneaux: Applied Analysis Seminar, LAGA, Paris 13 University, april 2015.

7.1.5. Research administration

Paul Vigneaux is a member of the Board of UMPA (since October 2009), of the Board of the Numerical Modelling Center of Lyon (PSMN), representing UMPA (since September 2008)

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

- Alvaro Mateos Gonzalez at ENS Lyon (PDEs, introduction to Latex, oral exams)
- Paul Vigneaux at ENS Lyon: Agrégation, L3 (numerical methods), M2 (Level set methods)
- Paul Vigneaux is member of the Board of MILYON, the Laboratory of Excellence (Labex) in Mathematics of Lyon (Since September 2011). This Labex aims at federating international research, higher education and society activities. In charge of evaluation and grant attribution for foreign students for M1, M2 and PhD in Lyon, since 2011.
- Paul Vigneaux Membre du Conseil du Département de mathématiques, ENS de Lyon (Janvier 2010 - aujourd'hui).

  Responsable c2i2e pour les mathématiques, ENS de Lyon (Janvier 2011 - aujourd'hui).
- Emmanuel Grenier at ENS Lyon: L3 (Topology, PDE) and Agrégation.

7.2.2. Supervision

- Vincent Calvez: Alvaro Mateos Gonzalez, Nils Caillerie
- Paul Vigneaux: Arthur Marly
- Emmanuel Grenier: Edouard Ollier

7.2.3. Juries

- Vincent Calvez: phD juries of Ariane Trescases (ENS Cachan) and Claire Guerrier (ENS Ulm)
- Vincent Calvez: assistant professor juries: Ecole Centrale Marseille, Ceremade (Dauphine)

7.3. Popularization

- Paul Vigneaux is a member of the board of "Images des Maths", a pedagogic website of CNRS.
- Vincent Valvez is coordinator of Math à Lyon, a monthly two-days mathematical exhibition in public highschools.

REO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific events organisation

10.1.1.1. Member of the organizing committees

- Matteo Aletti
  - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- Laurent Boudin
  - Member of the scientific committee of the "EDP Normandie 2015" conference.
- Sanjay Pant
  - Program committee member for the Australasian Conference on Artificial Life and Computational Intelligence (ACALCI), 2016.
- Jessica Oakes
  - ISAM Student Leader and 2015 Student Activity Conference Organizer
- I. Vignon-Clementel
  - Organizer of a minisymposium at the 4th International Conference on Computational & Mathematical Biomedical Engineering, July 2015, Cachan, France
  - Organizer of the monthly seminar at Inria Paris-Rocquencourt on "modeling and scientific computing"

10.1.2. Scientific events selection

10.1.2.1. Member of the conference program committees

- J-F. Gerbeau
  - Scientific Committee of the ENUMATH 2015 conference. Ankara, Turkey.
  - International Advisory Committee of the 2nd International Workshop on Latest Advances in Cardiac Modeling, 2015. Munich, Germany.

10.1.2.2. Reviewer

- J-F. Gerbeau
  - Expert evaluator for Horizon2020 FET OPEN RIA Call 2015/2.
  - Member of the Mathematics panel of the FCT, the national funding agency of Portugal (*Fundação para a Ciência e a Tecnologia*).
- M. Thiriet
  - European Research Council - Advanced Grant (run 2)
  - ANRT
  - Fund for Scientific Research - FNRS, Belgium

10.1.3. Journal

10.1.3.1. Member of editorial boards

- Jean-Frédéric Gerbeau
  - Editor-in-Chief of Mathematical Modelling and Numerical Analysis (M2AN).
  - Series editor of "SEMA SIMAI Springer Series".

  - Member of the editorial board of International Journal for Numerical Methods in Biomedical Engineering (IJNMBE).
  - Member of the editorial board of Communications in Applied and Industrial Mathematics.
  - Member of the editorial board of Journal for Modeling in Ophthalmology.
- I. Vignon-Clementel
  - Editor of Frontiers in Pediatric Cardiology
- M. Thiriet
  - Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization.

10.1.4. Research administration

- Laurent Boudin
  - Member of the Board of Mathematics Licence (EFU de Licence de mathématiques), UPMC
  - Member of the think-tank for third-year programs in Mathematics at UPMC.
  - Member of the IREM (Institutes for Research on Mathematics Teaching) Scientific Committee.
  - Member of the SMAI (French Society for applied and industrial mathematics) Teaching Committee.
- Muriel Boulakia
  - Supervisor of the teaching of mathematics at the engineer school Polytech Paris-UPMC
- Miguel Ángel Fernández Varela
  - Co-president of the Scientific Positions Commission, Inria Paris-Rocquencourt
- Jean-Frédéric Gerbeau
  - Service activity at Inria: Délégué Scientifique / Chairman of the project-teams' committee of Inria Paris-Rocquencourt research center; Member of the Inria Evaluation Committee; Member of the Inria International Chairs committee.
  - Service activity in other French institutions: member of the research committee of Sorbonne Universités; member of the scientific committee of Labex NUMEV, Montpellier.
  - Service activity abroad: member of the Reference Committee of the PhD program Mathematical Models and Methods in Engineering (Politecnico di Milano, Italy).
- Céline Grandmont
  - Member of the CNU 26 (2011–2015). Member of the CNU extended board.
  - Member of the Evaluation Committee Inria (2015-. . .)
- I. Vignon-Clementel
  - Mediator between PhD students and their supervisors for Inria Paris-Rocquencourt

10.1.5. Conferences

- Matteo Aletti
  - Minisymposium talk, 4th International Conference on Computational & Mathematical Biomedical Engineering (CMBE2015), June 29 - July 1, 2015, Cachan, France
  - Minisymposium talk, 13th U.S. National Congress on Computational Mechanics (USNCCM13), July 27 - July 30, 2015, San Diego, CA
  - Presentation at REVAMMAD (EU Marie Curie ITN) meeting, September 2015, Padova, Italy
- Chloé Audebert

  - Minisymposium talk, 4th International Conference on Computational and Mathematical Biomedical Engineering - CMBE2015, June 29th - July 1st, 2015, Cachan, France
  - PhD students seminar, Inria-Rocquencourt Junior Seminar, October 20th, 2015, Paris, France
  - Seminar, Laboratoire de mathématiques de Besançon, Université de Franche-Comté, November 12th, 2015, Besançon, France
  - PhD students seminar, Laboratoire de mathématiques de Versailles, Université Versailles St-Quentin, December 3rd, 2015, Paris, France
- Laurent Boudin
  - Seminar, Analysis, LMPT, Univ. Tours, France, March 2015.
  - Seminar, Applied Mathematics, LMNO, Univ. Caen, France, March 2015.
  - Invited speaker, Workshop "From opinion dynamics to voting, conflict and terrorism", Sciences Po Paris, France, March 2015
  - Invited speaker, Labex SMART Summer School on "Computational Social and Behavioral Sciences", UPMC, France, September 2015
  - Seminar, Numerical analysis and PDEs, LMO, Univ. Paris-Sud, France, December 2015
- Muriel Boulakia
  - November 2015 : Seminar at University College London
  - August 2015 : Workshop PDE, optimal design and numerics, Benasque (Spain)
  - April 2015 : Seminar at Université d'Orsay Paris-Sud
- Miguel Ángel Fernández Varela
  - Invited speaker, Workshop on fluid-structure interactions: an asymptotic approach, A Coruña, Spain, October 8-9, 2015
  - Minisymposium talk, X-DMS 2015 eXtended Discretization MethodS conference, Ferrara, Italy, September 9-11, 2015
  - Invited speaker, Workshop on Control and Numerics for Fluid-Structure Interaction Problems, TFIR CAM, Bangalore, India, June 29-July 1, 2015
  - Invited speaker, Numerical analysis week of Besançon on XFEM, Nitsche FEM, adaptive FEM and artificial boundary contitions, Besançon, France, June 15-19, 2015
  - Seminar, Modeling and Scientific Computing Seminar, Inria Paris-Rocquencourt, March 3, 2015
- Benoit Fabrèges
  - Seminar, MOX Seminar at Politenico di Milano, Milan, Italy, July 28, 2015
- Jean-Frédéric Gerbeau
  - Invited lecture at the Edinburgh Mathematical Society, 2015
  - Invited lecture, 2d International Workshop on Latest Advances in Cardiac Modeling (LACM), Munich, 2015
  - Invited lecture, 3rd Workshop on Model Reduction (MORE), Pilsen, Czech Republic, 2015
  - Seminar, MOX, Politecnico di Milan, Italy, March, 2015
  - Seminar, ENS Rennes, Dec 16, 2015
  - Minisymposium talk, USNCCM, San Diego, USA, 2015
- Céline Grandmont
  - Invited speaker, Lions-Magenes day, April 2015, Pavia, Italy

  - Invited Speaker, Workshop on Control and Numerics for Fluid-Structure Interaction Problems, TFIR CAM, Bangalore, India, June 29-July 1, 2015

- Mikel Landajuela
  - Contributed talk, 13th U.S. National Congress on Computational Mechanics, San Diego, USA, July 26–30, 2015
  - Seminar, 2nd UCL/Inria Workshop on embedded interfaces, UPMC, Paris, France, April 8, 2015
  - Seminar, MOX, Milano, Italy, December 10, 2015
- Damiano Lombardi
  - Invited talk, Optimal Transport workshop, Bordeaux, October 16 2015
  - Seminar, Bordeaux, *On the Backward Uncertainty Quantification problem*, March 2015
  - Seminar, Laboratoire Jacques Louis Lions, UPMC, December, Paris, 2015
  - Minisymposium talk, 1st Pan-American Congress on Computational Mechanics, Buenos Aires, Argentina, April 27-29, 2015
- Jessica Oakes
  - Invited talk, Computational Fluid Dynamics in Medicine and Biology. Albufeira, Portugal. September 2015
  - Seminar, University at Buffalo, December 2015
  - Seminar, University of California, Los Angeles. November 2015
  - Seminar, University of California, Irvine. October 2015
  - Seminar, University of Arizona, Tucson. February 2015
  - Seminar, University of California, Davis. January 2015
  - Contributed talk 13th U.S. National Congress on Computational Mechanics. San Diego, California. July 2015
  - Contributed talk 4th International Conference on Computational and Mathematical Biomedical Engineering. June 2015
  - Poster, International Society of Aerosol Medicine. Munich, Germany. June 2015
- Sanjay Pant
  - Seminar, King's College London, UK, October 2015
  - Seminar, Great Ormond Street Hospital, London, UK, October 2015
  - Contributed talk, 13th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, CMBBE , Montreal, Canada, September 2015
  - Contributed talk, 4th International Conference on Computational & Mathematical Biomedical Engineering, CMBE, Cachan, France, June–July, 2015
- Nicolas Pozin
  - Poster, 20th International Congress on Aerosols in Medicine and Pulmonary Drug Delivery, May 30 - June 3, 2015, Munich, Germany
- Marc Thiriet
  - Invited speaker, Second Tbilisi-Salerno Workshop on Modeling in Mathematics, Tbilisi, Mars 16-18, 2015
  - Keynote speaker, First Computational Mechanics Conference in Taiwan (ACMT), minisymposium MS017. Computational Biomedicine and Biomechanics, October 21–23, 2015, National Taiwan University, Taipei

  - Invited speaker, First Computational Mechanics Conference in Taiwan (ACMT), minisymposium MS017. Computational Biomedicine and Biomechanics, October 21–23, 2015, National Taiwan University, Taipei

- Eliott Tixier
  - Invited speaker, Lions-Magenes Days Scientific Meeting, April 13-14, 2015, Pavia, Italy.
  - Minisymposium talk, 1st International Conference on Uncertainty Quantification in Computational Sciences (UNCECOMP 2015), May 25-27, 2015, Crete Island, Greece.
  - Minisymposium talk, 4th International Conference on Computational & Mathematical Biomedical Engineering (CMBE 2015), June 29 - July 1, 2015, Cachan, France.
- Marina Vidrascu
  - Invited speaker, Workshop on numerical approximations of PDEs Honoring the 60th birthday of Fréderic Hecht, Málaga, Apri20-22
  - Invited speaker, Progrès récents en mécanique des fluides numérique. Colloque en l'honneur d'Alain Dervieux, april 10, Inria Sophia-Antipolis
- Irène Vignon-Clementel
  - Invited talk, Workshop DHU Hepatinov, Dec. 4th, Paul Brousse Hospital, Villejuif, France
  - Invited talk, CEA-GAMNI workshop, Feb. 5th, Paris, France
  - Invited talk, Computational Fluid Dynamics (CFD) in Medicine and Biology II, Sept. 2nd, Albufeira, Portugal
  - Seminar, Laboratoire Jacques Louis Lions, UPMC, April 3rd, Paris, France
  - Seminar, Paul Brousse Hospital meeting with ESPCI, March 16th, Villejuif, France
  - Talk, 4th International Conference on Computational & Mathematical Biomedical Engineering, July, Cachan, France
  - Evaluation seminar, ANR iFLOW midterm review, Nov 3rd, Paris, France

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence :

- Chloé Audebert
  - Sequences and series of functions, series, generalised integrals, 20h, L2-CNED, UPMC
- Laurent Boudin
  - Introduction to series for signal theory, 18h, L2, UPMC
  - Shared studies supervision in mathematics licence for approximately 500 students, 30h, L2-L3, UPMC
  - Mathematics licence supervision of all the "Double majeure" intensive bidisciplinary curriculum, 4h, L2, UPMC
- Muriel Boulakia
  - Scilab, 35h, L2, UPMC
  - Hilbertian analysis, 30h, L3, Polytech'Paris
  - Oral tests in numerical analysis, 20h, L3, UPMC
- Miguel Ángel Fernández Varela
  - Scientific Computing, 32h, L3, ENPC
  - Analysis and Scientific Computing, 31h, L3, ENPC

- Céline Grandmont
  - Professional insertion and orientation, 24h, L2, UPMC
  - EDO, 24h, L3, UPM
- Damiano Lombardi
  - Numerical methods, 48h, L3, Polytech'Paris
- Eliott Tixier
  - Matrix calculus, 36h, L1, UPMC
  - Linear algebra, 60h, L2, UPMC
- Irène Vignon-Clementel
  - Mathematics for biology, 54h, L1, Université de Versailles Saint Quentin
  - Numerical simulations of blood flow, 1,5h, as part of the undergraduate "continuum mechanics", AgroParisTech

Master :

- Laurent Boudin
  - Basics for numerical methods, 36h, M1, UPMC
- Muriel Boulakia
  - Preparatory course for teaching admission examination "Agrégation", 15h, M2, UPMC
- Jean-Frédéric Gerbeau
  - Numerical methods in hemodynamics (20h), M2, UPMC / Univ Paris-Sud / Ecole Polytechnique.
  - Seminar for the M2 students of the master "Math SV" (1h), M2, Univ Paris-Sud, December, 2015
  - Seminar for the Ecole des Mines students (3h), M2, Paris, February, 2015

Thematic schools:

- Laurent Boudin
  - Invited lecturer: "Aerosol in the lung: what mathematics can bring", Univ. Pavia, Italy. 4h. Doctoral level
- Miguel Ángel Fernández Varela
  - Invited lecturer: Summer school on "Control and numerics in fluid-structure interaction problems", TFIR CAM, Bangalore, India, June 22-26, 2015. 10h. Master and doctoral level
  - Invited lecturer: Autumn School on "Data driven computations in the life sciences", IST, Lisbon, Portugal, November 9-13, 2015. 7,5h. Master and doctoral level
- Céline Grandmont
  - Invited lecturer: Summer school on "Control and numerics in fluid-structure interaction problems", TFIR CAM, Bangalore, India, June 22-26, 2015. 10h. Master and doctoral level
  - Invited lecturer: CEMRACS "Coupling multi-physics models involving fluids", July 20 - August 28, 2015, CIRM, Marseille. 6h. Master and doctoral level

10.2.2. Supervision

PhD: Justine Fouchet-Incaux, Mathematical and numerical modeling of the human breathing, Supervisors: C. Grandmont & B. Maury, Defended on April 2015, Orsay.

PhD in progress: Chloé Audebert, *Modeling of liver hemodynamics*, since October 2013. Supervisors: J.-F. Gerbeau & I. Vignon-Clementel.

PhD in progress: Francesco Bonaldi, *Modélisation Mathématique et Numérique de Multi-Structures avec couplage Magnéto-Electro-Thermo-Elastique*, since October 2013, Supervisors: F Krasucki & M. Vidrascu

PhD in progress: Mikel Landajuela, *Coupling schemes and unfitted mesh methods for fluid-structure interaction*, since October 2012, Supervisor: M.A. Fernández Varela.

PhD in progress: Matteo Aletti, *Multiscale retinal vascular modeling* , since January 2014 Supervisors: J.-F. Gerbeau & D. Lombardi.

PhD in progress: Eliott Tixier, *Stem cells electrophysiology*, since September 2014 2014. Supervisors: J-F. Gerbeau & Damiano Lombardi.

PhD in progress : Nicolas Pozin Multiscale lung ventilation modeling in health and disease, since March 2014. Supervisors: C. Grandmont & I. Vignon-Clementel.

PhD in progress : Andrea Bondesan, Kinetic and fluid models, numerical and asymptotic analysis, since October 2015, Supervisors: L. Boudin, B. Grec & S. Martin.

10.2.3. Juries

- Laurent Boudin
  - Member of the PhD committee of Justine Fouchet-Incaux, Univ. Paris-Sud, April 2015
- Muriel Boulakia
  - Member of the PhD committee of Gwladys Ravon, Inria Bordeaux Sud-Ouest (referee)
- Jean-Frédéric Gerbeau
  - PhD committees: Francesco Ballarin, Politecnico di Milano (referee); Romain Lacroix, SupTelecom (referee); Alessandra Menafoglio, Politecnico di Milano; Victorien Menier, UPMC (chairman); Simone Palamara, Politecnico di Milano; Alexander Serov, Ecole Polytechnique (referee).
  - Hiring committee: Inria Rennes (CR2); UTC (Assistant Professor).
- Céline Grandmont
  - Hiring committee: Toulouse Univ. (Professor position), Bordeaux Univ. (Head of the hiring committee, Professor position), Orleans Univ. (Professor position).
  - Phd Referee: Philipp Nägele, Friburg University, Germany, June 2015
  - HDR Committee: Muriel Boulakia, UPMC, October 2015
- Marc Thiriet
  - Member of the PhD committee of Sami Hached, Ecole Polytechnique de Montréal (referee)
  - Member of the PhD committee of Tamara El Bouti, Université de Versailles Saint Quentin en Yvelines (referee)
  - Member of the PhD committee of Mohammad Haddadi, Université Paris Est–Créteil (referee)
  - President of thematic comittee CT3 (Biomedical Simulation and Applications to Health) of GENCI (Grand Equipement National de Calcul Intensif – National Large Equipement for Intensive Computation).
  - Member of Evaluation Groups of the Canadian Granting Agency NSERC
- Irène Vignon-Clementel
  - Member of the PhD committee of Damon Afquari, Universidad Politecnica de Madrid, Spain, December 2015

  - Member of the PhD committee of Stephanie Lindsey, Cornell University, USA, August 2015
  - Member of the PhD committee of Tamara El Bouti, Université Versailles Saint Quentin, July 2015

10.3. Popularization

- Matteo Aletti
  - presentation, "Raconte-moi ta thèse", Fête de la science, October 10th, 2015, Paris, France
- Chloé Audebert
  - poster session, Journée "Correspondances", Projet PEPS-égalité "Correspondances de Langlands", April 10th, 2015, Paris, France
  - presentation, "Raconte-moi ta thèse", Fête de la science, October 10th, 2015, Paris, France
- Jessica Oakes
  - Tutor and mentor to an under-represented minority student struggling in mathematics (1h per week)
  - SECO: Visit local elementary schools to assist students with hands on science activities (1h per month)
- Irène Vignon-Clementel
  - Intervention at the conference "Research: challenges and adventures", at which the research national strategic plan was presented to the French Prime Minister, in presence of the Minister for Education, Higher Education and Research, Dec 14th., Paris, France https://www.inria.fr/actualite/actualites-inria/la-strategie-nationale-de-recherche-presentee-au-premier-ministre