Activity Report 2017

Section Dissemination

AROMATH Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Member of the Organizing Committees

Bernard Mourrain (chair), Evelyne Hubert, André Galligo, Laurent Busé were members of the organizing committee of the conference MEGA (Effective Methods in Algebraic Geometry), held at the University of Nice – Sophia Antipolis, June 12 – 16, 2017.

Laurent Busé organized the first "Learning Week" of the ARCADES Network : « Opportunity Recognition » at Inria Sophia Antipolis, April 3-7, 2017.

Laurent Busé co-oragnized the workshop "Commutative Algebra, Syzygies and Singularities" at the University of Nice, December 4-6, 2017.

Ioannis Emiris and Christos Konaxis organized the 1st software workshop and the Midterm Review meeting of the ARCADES Network in Athens, November 27 to Decemeber 1, 2017.

Evelyne Hubert co-organized the mini-symposium *Symmetry and Structure in Algebraic Computation* in the conference SIAM Algebraic Geometry, July 31st to August 4th Atlanta (USA) as well as the first joint meeting of the London Mathematical Society and the Institute of Mathematics and its Applications *Symmetry and Comptutation*, October 12th London, UK.

Bernard Mourrain co-organized the mini-symposium *Sparse representations from moments* in the conference SIAM Algebraic Geometry, Atlanta July 31st to August 4th.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Laurent Busé was a PC member of MACIS 2017.

Ioannis Emiris was PC member of ACM ISSAC 2017, and is a member of the Advisory Board of MEGA.

Bernard Mourrain was a member of Executive Committee of the conference MEGA 2017.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Ioannis Emiris is associate editor of the Journal of Symbolic Computation (since 2003) and of Mathematics in Computer Science (since 2016).

Bernard Mourrain is associate editor of the Journal of Symbolic Computation (since 2007) and of the SIAM Journal on Applied Algebra and Geometry (since 2016).

Evelyne Hubert is associate editor of the Journal of Symbolic Computation (since 2007) and the journal Foundation of Computational Mathematics (since May). She is a reviewer for Mathematical Reviews (since 2016).

9.1.3.2. Reviewer - Reviewing Activities

Laurent Busé reviewed for the journal *Math. Zeitschrift*, the journal *Computer Aided Geometric Design*, the *Journal of Computational and Applied Mathematics*, the journal *ACM Transactions on Graphics*, the *Journal on Applied Algebra and Geometry*, the *Journal of Software for Algebra and Geometry*, the *Journal of Algebra*, the journal *Annales de l'Institut Fourier*, the journal *Algebra & Number Theory*, and the conferences MEGA, ISSAC and MACIS 2017. He also reviewed an application for CIFRE PhD thesis grants for the ANRT.

Ioannis Emiris reviewed for the journals *ACM Transactions on Graphics*, *Discrete Applied Mathematics*, *Discrete & Computational Geometry*, *Graphical Models*, and the conferences MEGA, and ACM Solid & Physical Modeling 2017. He also reviewed applications for H2020 Projects.

Bernard Mourrain reviewed for the journals *Advances in Computational Mathematics*, *Computer Aided Design*, *Computer Aided Geometric Design*, *Computational Methods and Function Theory*, *Computer Methods in Applied Mechanics and Engineering*, *Discrete Applied Mathematics*, *Foundations of Computational Mathematics*, *Journal of Pure and Applied Algebra*, *Linear Algebra and Applications*, *Mathematical Programming*, and for the conferences MEGA, ISSAC. He is also guest editor of the Special Issue of the *Journal Of Symbolic Computation* after MEGA 2017.

Alessandro Oneto reviewed for the journal *Linear and Multilinear Algebra* and for *Mathematical Reviews* (MathSciNet).

Evelyne Hubert reviewed for the journals *Foundation of Computational Mathematics*, *Journal of Symbolic Computation*, *Journal of Algebra*, as well as for the Springer book series *Texts and Monographs in Symbolic Computation* and the conferences MEGA and CASC.

9.1.4. Invited Talks

Laurent Busé was invited to give a talk at the workshop on *Syzygies*, Trento, September 4-9, 2017.

Ioannis Emiris was invited to give a talk at ETH Zurich, Switzerland, in February 2017; and at EU Joint Research Center, Ispra, Italy, in October 2017.

A. Galligo was invited to give a talk at the workshop *Stillman's Conjecture and other Progress on Free Resolutions: (in honor of the sixtieth birthdays of Dave Bayer and Mike Stillman)*, July 17-21, 2017 at the University of California, Berkeley, USA.

Evelyne Hubert gave plenary lectures at the *International Symposium on Orthogonal Polynomials, Special Functions and Applications* (July 3-7 Canterbury, UK) and at the *Journées Nationales du GdR Informatique-Mathématiques* (March 14-16, Montpellier).

Evelyne Hubert was invited to give talks at the first joint meeting of the London Mathematical Society and the Institute of Mathematics and its Applications, *Symmetry and Computation*, October 12th London, UK; the international conference *Integrable systems, symmetries, and orthogonal polynomials*, September 18-22 Madrid, Spain; the workshop *Resultants, Subresultants and Applications* in the SIAM Conference on Algebraic Geometry, July 31st to August 4th Atlanta, USA; the *Symbolic Analysis* workshop in the conference *Foundations of Computational Mathematics*, July 10-19 Barcelona, Spain; the Mathematics Colloquium at University of Kent in Canterbury, February 28th, UK; *Inaugural meeting of the LMS-EMS Applied Algebra and Geometry Research Network*, February 21st Nottingham, UK.

Bernard Mourrain was invited to give a talk at USTC and HFUT, Hefei, China, April 11-12.

Alessandro Oneto was invited to give talks at the Seminario de Geometría Algebraica y Singularidades, BCAM, Bilbao (Spain) on Hadamard decompositions of tensors, May 16, 2017; at the SIAM Conference in Applied and Algebraic Geometry, GeorgiaTech, Atlanta (USA) on Hadamard decompositions of matrices (and tensors), August 02, 2017; at the Algebra and Geometry Seminar, KTH, Stockholm (Sweden) on Combinatorial tools for new questions on planar polynomial interpolation, October 11, 2017; at the workshop Commutative Algebra, Syzygies and Singularities, Nice (France) on A new question on planar polynomial interpolation and line arrangements, December 4, 2017;

9.1.5. Scientific Expertise

Bernard Mourrain was member of the committee of the HCERES for the evaluation of XLIM, Limoges.

Ioannis Emiris was elected member of the Scientific Council of the Hellenic Foundation of Research and Innovation (http://www.elidek.gr), responsible for Informatics and Mathematics.

9.1.6. Research Administration

Evelyne Hubert is a member of the *Conseil Académique de l'Université Côte d'Azur* (since October) and of the *Commission d'Évaluation* (since 2015), and participated to the hiring jury of junior researchers in Inria NGE and RBA.

Laurent Busé is a board member of the (national) labex AMIES (CRI-SAM representative) and a member of the steering committee of the MSI, *Maison de la Modélisation, de la Simulation et des Interactions* of the University Côte d'Azur. He is also an elected member of the CPRH (Commission Permanente de Ressources Humaines) of the math laboratory of the university of Nice, and is the Inria representative at the "Academic Council" and the "Research Commission" of the University of Nice Sophia Antipolis.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : Ioannis Emiris, Discrete Math, 52 h, L1, U. Athens, Greece.
- Licence : Ioannis Emiris, Software development for algorithmic problems, 52 h, L3, U. Athens, Greece.
- Master : Ioannis Emiris, Computational Geometry, 52h, M1, U. Athens, Greece.
- Master : Ioannis Emiris, Structural Bioinformatics, 52h, M2, U. Athens, Greece.
- Master : Laurent Busé, Geometric Modeling, 27h ETD, M2, EPU of the University of Nice-Sophia Antipolis.
- Master 2: Bernard Mourrain, Computer Algebra, 15h, MDFI, Univ. Aix-Marseille, Luminy.
- Master 2: Bernard Mourrain, Symbolic-Numeric Computation, 6h, Master ACSYON, Limoges.

9.2.2. Supervision

PhD: Elisa Berrini, "Geometric modeling and deformation for automatic shape optimisation" [1], defended in June 2017. CIFRE collaboration with MyCFD. Supervised by Bernard Mourrain and Yann Roux (My-CFD,K-Epsilon).

PhD in progress: Erick Rodriguez-Bazan, Computational Invariant Theory and Applications, CORDI Inria SAM, started in November 2017, supervised by Evelyne Hubert.

PhD in progress: Evangelos Anagnostopoulos, Geometric algorithms for massive datasets. Started in May 2016, supervised by Ioannis Emiris.

PhD in progress: Evangelos Bartzos, Modeling motion. ARCADES Marie Skłodowska-Curie ITN, started in May 2016, supervised by Ioannis Emiris.

PhD in progress: Ahmed Blidia, New geometric models for the design and computation of complex shapes. ARCADES Marie Skłodowska-Curie ITN, started in September 2016, supervised by Bernard Mourrain.

PhD in progress: Alvaro-Javier Fuentes-Suarez, Skeleton-based modeling of smooth shapes. ARCADES Marie Skłodowska-Curie ITN, started in October 2016, supervised by Evelyne Hubert.

PhD in progress: Jouhayna Harmouch, Low rank structured matrix decomposition and completion. Cotutelle Univ. Liban, started in November 2015, cosupervised by Houssam Khalil and Bernard Mourrain.

PhD in progress: Clément Laroche, Change of representation in CAGD. ARCADES Marie Skłodowska-Curie ITN, started in Nov. 2016, supervised by Ioannis Emiris.

PhD in progress: Ioannis Psarros, Geometric approximation algorithms. Thales network (Greece), started in May 2015, supervised by Ioannis Emiris.

PhD in progress: Fatmanur Yildirim, Distances between points, rational Bézier curves and surfaces by means of matrix-based implicit representations. ARCADES Marie Skłodowska-Curie ITN, started in October 2016, supervised by Laurent Busé.

9.2.3. *Juries*

Anna Karasoulou (U. Athens) defended successfully her PhD in June 2017. She was supervised by I. Emiris, while B. Mourrain was in the three-person supervising committee of the thesis. Both were members of the seven-person exam committee.

L. Busé was a member of the committee of the PhD of Hao Quang Tran entitled *Images et fibres des applications rationnelles et algèbres d'éclatement*, University Pierre and Marie Curie, Paris, France, November 17th.

<div align="center" style="color:red">**DATASHAPE Project-Team**</div>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Frédéric Chazal co-organized, with M. Meila 5Univ. of Washington) the NIPS 2017 workshop "Synergies in Geometric Data Analysis", December 2017.
- Frédéric Chazal co-organized the workshop "Functoriality in Geometric Data", Schloss Dagstuhl, Germany, January 2017

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Jean-Daniel Boissonnat is a member of the Editorial Board of *Journal of the ACM*, *Discrete and Computational Geometry*, *International Journal on Computational Geometry and Applications*.

Frédéric Chazal is a member of the Editorial Board of *SIAM Journal on Imaging Sciences*, *Discrete and Computational Geometry (Springer)*, *Graphical Models (Elsevier), and Journal of Applied and Computational Topology (Springer)*.

Steve Oudot is a member of the Editorial Board of *Journal of Computational Geometry*.

10.1.3. Invited Talks

Jean-Daniel Boissonnat has been invited and gave a talk at NYU-AD on November 19, 2017.

Frédéric Chazal, Foundations of Computational Mathematics (FoCM'17), Computational Topology and Geometry workshop, Barcelona, Spain, July 2017.

Frédéric Chazal, Applied Topology in Bedlewo 2017 Conference, Bedlewo, Poland, June 2017.

Frédéric Chazal, UC Davis Statistical Sciences Symposium, Davis, USA, May 2017.

Frédéric Chazal, Applied and Computational Algebraic Topology, Hausdorff Institute, Bonn,Germany, April 2017.

Frédéric Chazal, The First International Conference on the Mathematics of Data Science, Hong Kong Baptist University, Hong Kong, March 2017.

Frédéric Chazal, CNA/Ki-Net Workshop: Dynamics and Geometry from High Dimensional Data, Carnegie Mellon University, March 2017.

Frédéric Chazal, Colloquium, collaborative research center Discretization in Geometry and Dynamics, Munich, February 7, 2017.

Frédéric Chazal, Statistics/Learning at Paris-Saclay, workshop at IHES, January 19, 2017.

Mathijs Wintraecken gave an invited talk at the SoCG workshop on Algorithms for the Medial Axis in Brisbane, June 2017.

Steve Oudot, BIRS workshop on Topological Data Analysis: developing abstract foundations, Banff, Canada, August 2017.

Steve Oudot, Mini-Symposium on Computational Topology, Brisbane, Australia, July 2017.

Steve Oudot, Dagstuhl seminar on Topology, computation and data analysis, Dagstuhl, Germany, July 2017.

Steve Oudot, Applied Topology Seminar, Brown University, USA, April 2017.

Steve Oudot, TRIPODS wokshop on Geometry and topology for data, ICERM, USA, December 2017.

Steve Oudot, workshop on Mathematical signal processing and data analysis, Bremen University, Germany, September 2017.

Steve Oudot, Conférence de rentrée Maths-Info, ENS Cachan, September 2017.

10.1.4. Leadership within the Scientific Community

Steve Oudot is co-organizing the monthly seminar on combinatorial and computational geometry at Institut Henri Poincaré.

Steve Oudot is co-head of the GT Géométrie Algorithmique since September 2017.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Collège de France : Jean-Daniel Boissonnat, Géométrie algorithmique: données, modèles, programmes, avril-juin 2017.

Master: Frédéric Chazal, Analyse Topologique des Données, 30h eq-TD, Université Paris-Sud, France.

Master: Jean-Daniel Boissonnat and Marc Glisse, Computational Geometry Learning, 36h eq-TD, M2, MPRI, France.

Master: Steve Oudot, Topological Data Analysis, 45h eq-TD, M1, École Polytechnique, France.

Master: Frédéric Cazals and Frédéric Chazal, Geometric Methods for Data Analysis, 30h eq-TD, M1, École Centrale Paris, France.

Master: Frédéric Chazal, Topological Data Analysis, 16h eq-TD, M2, Mathématiques, Vision, Apprentissage (MVA), ENS Paris-Saclay, France.

Winter School on Computational geometry and topology for data analysis, Jean-Daniel Boissonnat, Frédéric Chazal, Sophia-Antipolis, january 2017.

10.2.2. Supervision

PhD: Eddie Aamari, A Statistical Approach of Topological Data Analysis, September 1st, 2017, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Claire Brécheteau, Statistical aspects of distance-like functions , started September 1st, 2015, Frédéric Chazal (co-advised by Pascal Massart).

PhD in progress: Bertrand Beaufils, Méthodes topologiques et apprentissage statistique pour l'actimétrie du piéton à partir de données de mouvement, started November 2016, Frédéric Chazal (co-advised by Bertrand Michel).

PhD: Mathieu Carrière, Topological signatures for geometric data, defended November 21st, 2017, Steve Oudot.

PhD in progress: Jérémy Cochoy, Decomposition and stability of multidimensional persistence modules, started September 1st, 2015, Steve Oudot.

PhD in progress: Nicolas Berkouk, Categorification of topological graph structures, started November 1st, 2016, Steve Oudot.

PhD in progress: Théo Lacombe, Statistics for persistence diagrams using optimal transport, started October 1st, 2017, Steve Oudot.

PhD in progress: Alba Chiara de Vitis, Concentration of measure and clustering, Jean-Daniel Boissonnat and David Cohen-Steiner.

PhD in progress: Siargey Kachanovich, Manifold reconstruction in higher dimensions, Jean-Daniel Boissonnat.

PhD in progress: François Godi, Data structures and algorithms for topological data analysis and high dimensional geometry, Jean-Daniel Boissonnat.

PhD in progress: Siddharth Pritam, Approximation algorithms in Computational Topology, Jean-Daniel Boissonnat.

PhD in progress: Raphaël Tinarrage, Persistence and stability of nerves in measured metric spaces for Topological Data Analysis, started September 1st, 2017, Frédéric Chazal and Marc Glisse.

PhD in progress: Vincent Divol, statistical aspects of TDA, started September 1st, 2017, Frédéric Chazal (co-advised by Pascal Massart).

10.2.3. Juries

Frédéric Chazal was a member of the PhD defense committee of Aruni Choudhary, MPI (reviewer) and Aurelien Vasseur (co-advisor).

Jean-Daniel Boissonnat was a member of the PhD defense committee of Eddie Amari.

Steve Oudot was a member (examiner) of the PhD defence committees of Jérémy Dubut and Nicolas Ninin (Cosynus team, Ecole polytechnique).

10.3. Popularization

10.3.1. Inria-Industry Meeting

Marc Glisse, Miro Kramar and Steve Oudot held a booth for half a day.

Marc Glisse played for a small video which is now on the InriaInnovation YouTube channel https://youtu.be/lKNjGk-Z6b4.

KAIROS Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Eric Madelaine was General Chair of the 11th IEEE International conference on Theoretical Aspects of Software Engineering (TASE'2017), which was held in Sophia-Antipolis, september 2017. The whole conference was organized by the services of Inria Sophia Méditerranée Center.

- Marie-Agnès Peraldi-Frati and Frédéric Mallet organized the Workshop InS3Pect System engineering for Secured Services for Connected Objects. The workshop gathered approximately thirty researchers and industrials to explore a transdisciplinary approach for Connected Objects Secured Services modeling and validation https://www.i3s.unice.fr/ins3pect/fr/node/8/.

9.1.1.2. Member of the Organizing Committees

Frederic Mallet was a member of the organizing committee of COMPAS 2017, organized in Antibes from June 27th to 30th 2017 https://compas2017.sciencesconf.org/.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

- Robert de Simone: was Program Chair of EMSOFT 2017, part of the federated "superconference" ESWEEK 2017 (Seoul, Korea, October).

- Frédéric Mallet was Program Chair for TASE 2017.

- Eric Madelaine was Steering Committee Chair for the Int. Symposium on Formal Aspects of Component Software (FACS 2017).

- Frederic Mallet was steering committee member of ETR 2017

9.1.2.2. Member of Conference Program Committees

- Robert de Simone: FDL 2017, MEMOCODE 2017.

- Frederic Mallet: DATE 2017, Euromicro DSD 2017, FDL 2017, ModelsWard 2017, DHS 2017, ICTERI 2017.

- Julien Deantoni: Models 2017, DSD 2017, TASE 2017, Momo 2017, GEMOC 2017, EXE 2017, MDEbug 2017.

- Marie-Agnès Peraldi-Frati: national French Conférence en Ingénierie du Logiciel (CIEL).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Eric Madelaine was Guest Editor for the Science of Computer Programming journal, of a special issue on FACS 2016 selected papers.

9.1.4. Invited Talks

Sid Touati gave an Invited Tutorial entitled "Parametric statistics for program performance analysis, comparison and evaluation" at the 2017 International Conference on High Performance Computing and Simulation (HPCS 2017, Genova, Italy).

Eric Madelaine gave an invited seminar at ECNU Shanghai in Nov. 2017.

Frederic Mallet gave an invited talk on the "Model-Based System Engineering for Cyber-Physical Systems" at ECNU in Shanghai and in Suzhou University in December 2017. He also gave an invited talk together with Julien DeAntoni in the GT OVSTR of the Labex Digicosme in Telecom ParisTech in April 2017.

Julien Deantoni was invited speaker on the fourteenth Bellairs CAMPaM workshop on multi-paradigm modeling and simulation, in Barbados (http://msdl.cs.mcgill.ca/conferences/CAMPaM/2017/).

9.1.5. Leadership within the Scientific Community

Robert de Simone is Prime Investigator for the FM4CPS Associated-Team (with ECNU Shanghai); he is also Inria contact coordinator for the DESIR collaborative programme from SAFRAN on embedded system design. Eric Madelaine is member of the Council Board of the International Joint Lab of Trustworthy Software (IJLTS), from ECNU Shanghai.

9.1.6. Research Administration

Robert de Simone was Deputy Director of the EDSTIC Doctoral School until September 2017.

Frederic Mallet is the deputy director of the I3S Laboratory (UMR 7271 CNRS UNS) and he is in charge of the relationships with LEAT and of the research formations. He is also a member of the Steering Committee of the Poˆle de Compétitivité Solutions Communicantes Sécurisées (SCS) and of its board. He is the head of the first Year of the International Track of the Master on Foundations of Computer Sciences.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Robert de Simone, Models of Computation for Networks-on-Chips (MoCs for NoCs), 36h, M2 Internationbal, UNS.

Master: Robert de Simone, Functional and Temporal Correctness, 36h, M1 Internationbal, UNS.

Master : Julien Deantoni, Systèmes embarqués et Ambient, 10h, M2, Polytech'Nice, France.

Master : Julien Deantoni, Langage C++, 88h, M1,Polytech'Nice, France.

Master : Julien Deantoni, Finite State Machines, 24h, M1,Polytech'Nice, France.

Master : Julien Deantoni, Internship Management, 20h, M2, Polytech'Nice, France.

Licence : Marie-Agnes Peraldi-Frati, Algorithms and programming 60h,L1, UNS Institute of technology.

Licence : Marie-Agnes Peraldi-Frati, System and Networks administration 80h, L2, UNS Institute of technology .

Licence : Marie-Agnes Peraldi-Frati, Web Programming 50 h, L2, UNS Institute of technology.

Licence: Frédéric Mallet, Conception Orientée Objet, 45h, L3, UNS.

Licence: Frédéric Mallet, Programmation Orientée Objet, 45h, L3, UNS.

Master: Frédéric Mallet, Programmation Avancée et Design Patterns, 45h, M1, UNS.

Master: Frédéric Mallet, Vérification temporelle et fonctionnelle, 24h, M1, UNS.

Master: Frédéric Mallet, Model-Driven Engineering, 24h, M1, UNS.

9.2.2. Supervision

- PhD: Emilien Kofman, *Conception Haut Niveau Low Power d'objets mobiles communicants*, 2017, supervised by Robert de Simone, co-supervised by François Verdier (UMR CNRS/UNS LEAT).

- PhD in progress: Hui (Vincent) Zhao, UNS, started February 2016, supervised by Frédéric Mallet, co-supervised by Ludovic Apvrille (Telecom ParisTech)

- PhD in progress: Dongdong An, ECNU-SEI/China, started November 2016, co-supervised by R. de Simone, supervised by Jing Liu (ECNU).

- PhD in progress: Pierre Leca, CIFRE thesis at Huawey Research Lab (Paris), started 2017, supervised by Gaetan Haines and Ludovic Henrio, co-advisor Eric Madelaine
- PhD in progress: Zhao Yanrui, ECNU-SEI/China, started in January 2017, co-supervised by Yixiang Chen (ECNU) and Frederic Mallet

9.2.3. Juries

Robert de Simone: Examiner (Président) for the PhD of Vincenzo Mastandrea (UCA)

Frédéric Mallet: Examiner (President) for the HDR of Jerome Hugues from ISAE Sup'Aero.

MARELLE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

- Anders Mörtberg was an organizer of the 3rd workshop on Homotopy Type Theory and Univalent Foundations in Oxford, 8-9 September.

8.1.1.2. Chair of Conference Program Committees

- Yves Bertot was program committee co-chair for CPP'17 (Certified Programs and Proofs), in Paris, in January 2017.
- Yves Bertot is program committee co-chair for CoqPL'18 (Coq for Programming Lanugages), in Los Angeles, in January 2018.

8.1.1.3. Member of the Conference Program Committees

- Laurence Rideau was member of the program committee for JFLA'2018 (Journées francophones des langages applicatifs).

8.1.1.4. Reviewer

- Members of the team reviewed papers for JFLA (Journées Francophones des Langages Applicatifs), PoPL (Principles of Programming Languages), CPP (Certified Programs and Proofs), ITP (Inter-active Theorem Proving), LPAR (Logic for Programming, Artificial Inteligence, and Reasoning), TACAS (Tools and Algorithms for the Construction and Analysis of Systems).

8.1.2. Journal

8.1.2.1. Reviewer - Reviewing Activities

- Members of the team reviewed papers for JAR (Journal of Automated Reasoning), and MSCS (Mathematical Structures in Computer Science).

8.1.3. Invited Talks

- Anders Mörtberg gave an invited talk at TTT (Type-Theory based Tools) in Paris in January and an invited talk at the workshop on Syntax and Semantics of Type Theory in Ljubljana in February.
- Cyril Cohen was invited for a talk at the workshop on Real Verification in South Korea in July.
- Damien Rouhling gave an invited talk at a meeting of the ANR-funded FastRelax project.

8.1.4. Scientific Expertise

- Yves Bertot performed a project review for the Dutch research funding agency (NWO).

8.1.5. Research Administration

- Yves Bertot is a member of the "Bureau du comité des projets".
- Yves Bertot is a member of the scientific committee for Academy "RISE" of University Côte d'azur.
- Yves Bertot was a member of the national working group for the strategic plan of Inria.
- Benjamin Grégoire is a member of the committee on the computer tool usage (CUMI) for the Sophia-Antipolis Méditerranée Inria center.
- José Grimm is a member of the local committee for hygiene and work safety.

- Laurence Rideau was a member of the Jury for hiring new researchers at Inria Sophia Antipolis (Jury d'admissibilité de chargés de recherche, Inria Sophia Antipolis Méditerranée).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Doctorat: Enrico Tassi organized an advanced school on Coq and the Mathematical Components library, where Laurence Rideau, Cyril Cohen, Laurent Théry, and Yves Bertot gave lectures and supervised laboratory sessions. This school took place in December and had 12 attendants.

Doctorat: Enrico gave a course "Type Theory, The Coq proof assistant", at the University of Padova in June.

Master: Yves Bertot organized an introductory school on Coq. This school took place in January and had 12 attendants.

Licence: Sophie Bernard gave 54 hours of lectures on probabilities at University of Nice Sophia Antipolis.

Licence: Damien Rouhling taught about 60 hours at University Nice Sophia Antipolis: differential calculus, Fourier analysis, and C programming (First year students).

Licence: Boris Djalal taught 4 hours of computer science for first year students in a "classe préparatoire aux grandes écoles".

Licence: Cécile Baritel-Ruet taught 30 hours of computer science for first year students at Université de Nice, and 12 hours of lectures on computer science history.

Licence: Laurence Rideau taught 10 hours of computer science in a "classe préparatoire aux grandes écoles"

Licence: Cyril Cohen gives mathematics exercises in a "classe préparatoire aux grandes écoles".

Master: Laurent Théry taught 3 hours on "introduction to computer verified proof" at Ecole des Mines de Paris,

8.2.2. Supervision

PhD in progress : Cécile Baritel-Ruet, "Formal verification of Security with EasyCrypt", started October 2016, supervised by Benjamin Grégoire and Yves Bertot,

PhD in progress : Sophie Bernard, "Formal proofs for transcendance", started October 2016, supervised by Yves Bertot and Laurence Rideau,

PhD in progress : Boris Djalal, "Formal verification of cylindrical algebraic decomposition", supervised by Cyril Cohen and Yves Bertot,

PhD in progress : Mohammad El Laz, "Formal study of Security", started December 2017, supervised by Benjamin Grégoire and Tamara Rezk (Indes Inria project team),

PhD in progress, : Damien Rouhling, "Formal proofs for control and robotics", started in October 2016, supervised by Yves Bertot and Cyril Cohen.

8.2.3. Juries

- Laurent Théry attended the middle thesis review for David Braun, in Strasbourg,
- Enrico Tassi was a member of the Jury for the defence of Roberto Blanco Martinez (Ecole Polytechnique),
- Laurent Théry was a member of the Jury for the defence of Thomas Sibut-Pinote (Ecole Polytechnique).

8.3. Popularization

Laurent Théry gave a talk in high-school (Centre International de Valbonne) in the context of the annual "Fête de la Science".

Damien Rouhling and Cécile Baritel-Ruet participated to the event "My thesis in 180 seconds" at the regional level.

ACUMES Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- P. Goatin is member of the the scientific committee of the annual seminar CEA-GAMNI *"Numerical fluid-mechanics"*.
- J.-A. Désidéri and A. Habbal had organized and chaired the 27th IFIP TC7 Conference on System Modeling and Optimization (Sophia Antipolis, June 29 - July 3, 2015). As a result, they jointly chaired with L. Bociu (North Carolina University) the reviewing panel that elaborated the book of revised contributions edited by Springer [29].

8.1.1.2. Member of the Organizing Committees

- P. Goatin was member of the organizing committee of the Indam *"Transport Modeling and Management: Vehicles and Crowds"*, Roma (Italy), March 2017.
- R. Duvigneau and A. Habbal organized a minisymposium *PDE-Constrained Optimization, Control and Games: New Models and Methods - Part I and II* at the SIAM Conference on Optimization, May 22-25, Vancouver BC (Canada).

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

- A. Habbal is member of the the scientific committee of the 8th Conference on Trends in Applied Mathematics Tunisia-Algeria-Morocco TAMTAM 2017, May 10-13, Hammamet (Tunisia).

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

- P. Goatin is member of the Editorial Board of *Networks and Heterogeneous Media*.

8.1.3.2. Reviewer - Reviewing Activities

- J.-A. Désidéri has made reviews for the *International Journal of Information Technology & Decision Making*, *Comptes Rendus de l'Académie des Sciences*, and *Algorithms*.
- R. Duvigneau is a reviewer for the following international journals : Computers & Fluids, International Journal for Numerical Methods in Fluids, Computer Methods for Applied Mechanical Engineering, Computer Aided Geometric Design, Applied Mathematics & Mechanics, Engineering Optimization.
- P. Goatin is reviewers for the following international journals: Acta Applicandæ Mathematicæ ; African Journal of Mathematics and Computer Science Research; Algorithms; Annales de l'Institut Henri Poincaré (C) Analyse Non Linéaire; Applied Mathematics and Computation; Computer-aided Civil and Infrastructure Engineering; Discrete and Continuous Dynamical Systems; European Journal of Operational Research; IEEE Transactions on Automatic Control; IEEE Transactions on Intelligent Transportation Systems; International Journal of Dynamical Systems and Differential Equations; Journal of Computational Physics; Journal of Flow, Turbulence and Combustion; Mathematical Models and Methods in Applied Sciences; Mathematics of Computation; Networks and Heterogeneous Media; New Journal of Physics; Nonlinear Analysis Ser. B: Real World Applications; SIAM Journal of Mathematical Analysis; SIAM Journal of Applied Mathematics; SIAM Journal of Numerical Analysis; SIAM Journal on Scientific Computing.

- A. Habbal is reviewer for the following international journals: Applied Mathematics (AM), Scientific Research Publishing ; Journal of Structural and Multidisciplinary Optimization ; Journal of Math. Model. Nat. Phenom. ; International Journal of Mechanical Sciences ; Modern Applied Science ; Asian Journal of Control ; Applied Mathematics and Computation ; Computer Methods in Applied Mechanics and Engineering ; Bulletin of Mathematical Biology ; Journal of Pure and Applied Functional Analysis ; Int. Journal of Mathematical Modeling and Numerical Optimization; Numerische Mathematik; Journal of Differential Equations; EMS Surveys; AMS reviews.

8.1.4. Invited Talks

- P. Goatin: Workshop "Current topics in kinetic theory", Warsaw (Poland), March 2017.
  Invited talk: *"Non-local macroscopic models of traffic flow"*.

- A. Habbal: Univ. Wurzburg Chair of Mathematics (Scientific Computing) Mathematical Colloquium, Wurzburg, April 2017.
  Invited talk: *Modeling avoidance dynamics by FP-constrained Nash games*

- P. Goatin: Barcelona Mathematical Days, Barcelona (Spain), April 2017.
  Session "Progress in Transport Phenomena".
  Invited talk: *"Non-local conservation laws arising in traffic modeling"*.

- P. Goatin: 2016-17 Warwick EPSRC Symposium, Warwick (UK), May 2017.
  Workshop "Emerging PDE models in Socio-Economic 'Sciences".
  Invited talk: *"Moving bottlenecks in traffic flows"*.

- J.-A. Désidéri & A. Dervieux: Journées Scientifiques Inria, Sophia Antipolis, 14-16 June, 2017:
  Invited talk: 50 ans de calcul scientifique: le point de vue de numériciens des fluides (*50 years of scientific computing: the viewpoint from CFD-ers*).

- P. Goatin: ICERM Topical Workshop "Pedestrian Dynamics: Modeling, Validation and Calibration", Providence, RI (USA), August 2017.
  Invited talk: *"Macroscopic modeling and simulation of crowd dynamics"*.

8.1.5. Research Administration

- P. Goatin is member of BCP ("Bureau du Comité des Projets") at Inria Sophia Antipolis Méditerranée.

- R. Duvigneau is member of CDT ("Comité Développement Technologique) at Inria Sophia Antipolis Méditerranée.

- R. Duvigneau is member of CSD ("Comité Suivi Doctoral) at Inria Sophia Antipolis Méditerranée.

- R. Duvigneau is responsible for the Immersive Space Committee at Inria Sophia Antipolis Méditerranée.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: Advanced Optimization, 40.5 hrs, M2, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (J.-A. Désidéri, R. Duvigneau).

Master: Conservation laws and finite volume scheme, 30 hrs, M2, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (P. Goatin).

Master: Multidisciplinary Optimization, 22.5 hrs, joint *Institut Supérieur de l'Aéronautique et de l'Espace* (ISAE Supaéro, "Complex Systems") and M2 (Mathematics), Toulouse (J.-A. Désidéri).

Licence: Summer Project in Mathematical Modeling, 36 hrs, L3, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

Master: Numerical Methods for Partial Differential Equations, 66 hrs, M1, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal and R. Duvigneau).

Master: Modeling strategies for e-Formula races, M1 Students Project, Ecole Polytechnique Universitaire (EPU), Nice Sophia Antipolis (A. Habbal).

8.2.2. *Supervision*

PhD in progress : Cédric Durantin, *Meta-modelling for the optimization of nanophotonic devices*, October 2014. Supervisors : J.-A. Désidéri and A. Glière (CEA LETI).

PhD in progress : Quentin Mercier, *Multicriterion optimization under uncertainties : the stochastic multiple gradient approach. Application to aerelasticity*, October 2015. Supervisors : J.-A. Désidéri and F. Poirion.

PhD in progress : Sosina Mengistu-Gashaw (EURECOM), *Mobility and connectivity modelling of 2-wheels traffic for ITS applications* , March 2015. Supervisors: P. Goatin and J. Härri (EURECOM).

PhD in progress: Rabeb Chamekh, *Game strategies for thermo-elasticity*, Jan 2015, Supervisors: A. Habbal, Moez Kallel (LAMSIN, ENIT, Tunis)

PhD in progress: Marwa Ouni, *Solving inverses problems in fluid mechanics with game strategies*, October 2016, Supervisors: A. Habbal, Moez Kallel (LAMSIN, ENIT, Tunis)

PhD in progress: Kelthoum Chahour, *Modeling and optimal design of coronary angioplastic stents*, Nov 2015, Supervisors: A. Habbal, Rajae Aboulaich (LERMA, EMI, Rabat)

PhD in progress: A. Azaouzi, *isogeometric analysis methods for hyperbolic systems*, ENIT (Tunisia) / University of Nice - Sophia Antipolis, Oct. 2013, supervisors: R. Duvigneau and M. Moakher (ENIT).

PhD in progress: M. Sacher, *advanced methods for numerical optimization of yacht performance*, Ecole Navale , Oct. 2014, supervisors: R. Duvigneau, O. Le Maitre (LIMSI), F. Hauville and J.-A. Astolfi (Ecole Navale).

PhD in progress: C. Fiorini, *Sensitivity equation method for hyperbolic systems*, Univ. Versailles, Oct. 2014, supervisors: R. Duvigneau, C. Chalons (Univ. Versailles).

PhD in progress : Nicolas Laurent-Brouty (ENPC), *Macroscopic traffic flow models for pollution estimation and control*, September 2016. Supervisor: P. Goatin.

PhD in progress : Felisia Angela Chiarello (Université de Nice Sophia Antipolis), *Conservation laws with non- local flux*, October 2016. Supervisor: P. Goatin .

PhD in progress : Nikodem Dymski (Maria Curie Sklodowska University & Université de Nice Sophia Antipolis), *Conservation laws in the modeling of collective phenomena*, October 2016. Supervisors: P. Goatin and M.D. Rosini (UMCS).

PhD defended on November 2017: Boutheina Yahyaoui, *Validation of mecano-chemo-biological models for cell sheet wound closure*, Jan 2013, Supervisors: A. Habbal, Mekki Ayadi (LAMSIN, ENIT, Tunis)

8.2.3. *Juries*

- P. Goatin was member of the committee of P. Grandinetti's PhD thesis *"Control of large-scale traffic networks"*, Université de Grenoble, September 11th, 2017.
- A. Habbal was member of the committee of F. Kpadonou *Optimisation de forme et anisotropie par une méthode isogéometrique-polaire* , Université de Versailles et Saint-Quentin, August 31, 2017.

8.3. Popularization

- J.-M. Loubes and P. Goatin, *"La prédiction dans les transports"*, Les Big Data à découvert, CNRS Editions (2017), pp. 124-125.
- Press article: *Les mathématiciennes ont de plus en plus confiance*, La Tribune, May 2017. Portrait of P. Goatin by L.J. Baudu.
- P. Goatin gave the talk *"Le trafic routier en équations"* at Luxembourg University and at Lycée Aline Mayrisch du Luxembourg on October 5, 2017, as part of the conference cycle *"La Recherche au féminin"* organized by the French Institute of Luxembourg.
- Web Press articles : *On a Collision Course with Game Theory* about the Royal Society Proceedings paper [13] in https://phys.org/news/2017-09-collision-game-theory.html and in http://www.sciencenewsline.com/news/2017092714240040.html

APICS Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

- L. Baratchart gave a talk at SEAM 2017 https://www.math.utk.edu/SEAM/ and organized a scientific session at AIP 2017 http://aip2017.csp.escience.cn/dct/page/1.
- J. Leblond presented oral communications at the Conference "Cerveau.at.UCA", http://cauca2017.sciencesconf.org/, Fréjus, France, Jun., at the Workshop ERNSI 2017, http://ernsi2017.sciencesconf.org/, Lyon, France Sept. and a poster at the Conference BACI 2017, http://www.baci-conference.com/, Bern, Switzerland, Aug.
- J.-P. Marmorat presented a poster at the 18th International Symposium on Applied Electromagnetic and Mechanics (ISEM), http://www.isem2017.org/, Chamonix, France, Sep.
- K. Mavreas presented oral communications at the Conference Tendances des Applications Mathématiques en Tunisie, Algérie, Maroc (TAMTAM), http://indico.math.cnrs.fr/event/1335/overview, Hammamet, Tunisia, May [13], at the 18th ISEM, http://www.isem2017.org/, Chamonix, France, Sep. [25], and at the PhD Seminar of the Research Center, Jun.
- C. Papageorgakis gave an oral communication at the Conference TAMTAM, http://indico.math.cnrs.fr/event/1335/overview, Hammamet, Tunisia, May [14], and at the Conference GRETSI 2017, http://gretsi.fr/colloque2017/, Juan-Les-Pins, France, Sep. [17].
- D. Martinez presented a poster at the International Microwave Symposium 2017 https://ims2017.org/, Hawaii, USA.
- G. Bose gave a talk at the International Conference on Electromagnetics in Advanced Applications http://www.iceaa.net/j3/, Verona, Italy, [15].
- A. Cooman presented a poster at the Workshop ERNSI 2017, http://ernsi2017.sciencesconf.org/, Lyon, France.
- M. Olivi gave a seminar at ONERA, Toulouse, January 12. She presented a poster at the Workshop ERNSI 2017, http://ernsi2017.sciencesconf.org/, Lyon, France.

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- J. Leblond was the scientific chair of a mini-symposium at the Conference TAMTAM, http://indico.math.cnrs.fr/event/1335/overview, Hammamet, Tunisia, May.

8.1.1.2. Member of the Organizing Committees

- K. Mavreas was one of the organizers of the PhD seminar of the Research Center, until Oct.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

L. Baratchart was a member of the program committee of "Control and Distributed Parameter Systems", Bordeaux, 2017.

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

L. Baratchart is an editor for "Complex Analysis and Operator Theory" (CAOT) and "Constructive Methods and Function Theory" (CMFT).

8.1.3.2. Reviewer - Reviewing Activities

S. Chevillard was a reviewer for the journal *Transactions on Computers*.

J. Leblond was a reviewer for the journals *Czechoslovak Mathematical Journal, Annals of West University of Timisoara - Mathematics and Computer Science, ESAIM: Control, Optimisation and Calculus of Variations, Adv. in App. Clifford Algebras, ARIMA, Numerical Algorithms*.

F. Seyfert was a reviewer for the journal *IEEE Microwave Theory and Techniques*.

M. Olivi was a reviewer for the journal *Automatica*.

8.1.4. Invited Talks

L. Baratchart was an invited speaker at the conference "Complex and Functional Anaysis and teir interactions with Harmonic Analysis", Bedlewo, Poland (June) https://plas.mat.umk.pl/etcafa/cfaha.html and at the "Harmonic Analysis and Inverse Problems" session of the Mathematical Congress of the Americas, Montreal, Canada (Jul.) https://mca2017.org/prog/sessions/scientific. He was a plenary speaker at the conference "Complex and Harmonic Analysis", Holon, Israel (June) http://www.hit.ac.il/acc/golberga/CHA17/CHA17.html and an invited speaker at the "Midwestern Workshop on Asymptotic Analysis", Indianapolis, USA (October) http://mwaa.math.iupui.edu/, as well as an invited speaker at the conference "Mathematics, Signal Processing and Linear Systems: New Problems and Directions", http://www1.chapman.edu/~mbvajiac/conferences/2017Conference.html, Chapman University, Orange, CA, USA, Nov.

J. Leblond was an invited speaker at the 17ème Journée Calcul Scientifique et Modélisation Mathématique d'Amiens, http://www.lamfa.u-picardie.fr/desveaux/JCS17/journeeCS16.html, June, at the Conference on Control of Distributed Parameter Systems (CDPS 2017), http://indico.math.cnrs.fr/event/1363/, Bordeaux, July, at the annual days of GdR AFHP, http://www.math.u-bordeaux.fr/~sgolenia/GDR/, Bordeaux, Oct., and at the Conference Mathematics, Signal Processing and Linear Systems: New Problems and Directions, http://www1.chapman.edu/~mbvajiac/conferences/2017Conference.html, Chapman University, Orange, CA, USA, Nov.

M. Olivi was invited to give a communication at the symposium "Mathematics in Knowledge Engineering and Data Science - Identifying Connections", June 30, in Maastricht, the Netherlands.

8.1.5. Scientific Expertise

F. Seyfert is a member of the IEEE MTT-8 Technical Committee on Filters and Passive Components

8.1.6. Research Administration

L. Baratchart sits on the committee "Mathématiques et Informatique" of the French Agency for research (ANR).

J. Leblond is an elected member of the "Conseil Scientifique" and of the "Commission Administrative Paritaire" of Inria. Until April, she was a member of the "Conseil Académique" of the Univ. Côte d'Azur (UCA).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Graduate course: L. Baratchart gave a graduate course titled "Introduction to Inverse Problems" (40 hours) at Vanderbilt University, Nashville, Tennessee.

Colles: S. Chevillard is giving "Colles" at Centre International de Valbonne (CIV) (2 hours per week).

Summer School: M. Olivi gave two lectures at the 38-th summer school of automatic control, Grenoble, September 11-15: "Optimization-based model reduction" with P. Vuillemin (Onera) and "Applications in electronics: design of frequency filters and stability analysis of amplifiers".

8.2.2. Supervision

PhD: C. Papageorgakis, *Conductivity model estimation*, since October 2014 (advisors: J. Leblond, M. Clerc, M. Rusiniak), defended Dec. 15th [10].

PhD in progress: K. Mavreas, *Inverse source problems in planetary sciences: dipole localization in Moon rocks from sparse magnetic data*, since October 2015 (advisors: S. Chevillard, J. Leblond).

PhD in progress: D. Martinez Martinez, *Méthodologie et Outils de Synthèse pour des Fonctions de Filtrage Chargées par des Impédances complexes*, since October 2015, advisors: L. Baratchart and F. Seyfert.

PhD in progress: G. Bose, Filter Design to Match Antennas, since December 2016, advisors: F. Ferrero and F. Seyfert.

PhD in progress: S. Fueyo, Cycles limites et stabilité dans les circuits,since October 2016, advisors: L. Baratchart and J.-B. Pomet.

8.2.3. Juries

L. Baratchart was a referee of the "Mémoire d'habilitation" by Nicolas Brisebarre (ENS de Lyon).

J. Leblond was a member of the "Jury d'admissibilité du concours CR2" of the Inria Research Center Nancy Grand Ouest and of the "Comité de Sélection" for professors at UNSA (Polytech Nice), in March. She was a member of the PhD thesis defense committee of Lobna Merghmi, Aix-Marseille Université, Institut de Math. de Marseille (I2M), Jan.

M. Olivi was a reviewer for the PhD document of Igor Pontes-Duff-Pereira, université de Toulouse, January 11. She was a member of the PhD thesis defense committees of Afrooz Ebadat, KTH, Stockholm, September 8, and Yusuf Bhujwalla, université de Lorraine, Nancy, December 5. She was a member of the "jury d'admission du concours CR" of Inria.

8.3. Popularization

- M. Olivi is responsible for Scientific Mediation and president of the Committee MASTIC (Commission d'Animation et de Médiation Scientifique) https://project.inria.fr/mastic/. Her main contributions related with this mission were:
  - management of the contract "région PACA: Science Culture Lycée" and organization of about thirty conferences in the high schools of the region (100 students per conference),
  - co-organization of 10 robotics sessions for 2 classes of middle school students (device "MEDITES" http://medites.fr, founded by ANRU, the "Agence Nationale de Rénovation Urbaine"),
  - co-organization of the "stage MathC2+", a four-day internship for 50 high school students ("secondes", about 16 years old) organized by the Commitee MASTIC and its partners (June 14-17),
  - co-organization of Inria participation to the event "Le Village des Sciences et de l'Innovation" in Antibes (October 7 & 8, 10000 people),
  - co-organization of about 10 "cafés scientifiques" (c@fé-in's and cafés Techno, 30 to 80 participants each),
  - supervision of a (2 months) internship, done by Sabrina Ballauris, for the realization of objects to manipulate, in view of illustrating some mathematical results and scientific principles (Pythagora's puzzles, Galton's board, Galileo's experiment, the fastest toboggan, ...)

She was a member of the scientific committee of the "Forum Mathématiques Vivantes", a national event (initiated by CFEM, the French Commission for Mathematics Education, http://forum-maths-vivantes.fr/) organized in Lille, Lyon, Rennes, Toulouse during the Mathematics Week. She participated into the reviewing process for the book "Panorama Mathématiques et Langages" published in this occasion by CFEM.

- M. Olivi animated two half-day workshop sessions "activités débranchées" at "l'ESPE de Nice" for primary school students (March 16 & 24), 200 students each session). She gave three presentations for high school students in Gap and Marseille. With K. Mavreas, she participates to the event "Le Village des Sciences et de l'Innovation" in Antibes (October 7 & 8, 10000 people).
- A. Cooman gave a presentation at the "stage MathC2+", a four-day internship for high-school students organized by the Committee MASTIC and its partners (June 14-17).

ECUADOR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committees

- Laurent Hascoët was the local organizer, and one of the speakers/teachers during the 2-days training of the Marie Curie FP7 programme "IODA" on Algorithmic Differentiation, http://ioda.sems.qmul.ac.uk/events/nice2017, february 13-14.
- Laurent Hascoët is on the organizing commitee of the EuroAD Workshops on Algorithmic Differentiation. This year, the team organized the 20th EuroAD workshop at Inria Sophia-Antipolis, http://www.autodiff.org/?module=Workshops&submenu=EuroAD/20/main, february 16-17.
- Alain Dervieux organized two workshops for the ANR project MAIDESC, on may 11th and november 16th.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Laurent Hascoët, Optimisation avancée, 15 h, M2, University of Nice

9.2.2. Supervision

PhD : Ala Taftaf, "Extensions of Algorithmic Differentiation by Source Transformation to meet some needs of Scientific Computing", defended january 17, advisor L. Hascoët

PhD in progress : Éléonore Gauci, "Norm-oriented criteria for CFD and coupled CSM-CFD systems", started october 2014, advisor A. Dervieux

PhD : Emmanuelle Itam, "Simulation numérique d'écoulements autour de corps non profilés par des modèles de turbulence hybrides et un schéma multi-rate", defended november 30, co-advisor A. Dervieux

9.2.3. Juries

- Stephen Wornom, jury, PhD defense of Emmanuelle Itam, Université Montpellier II, november 30.

MCTAO Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- J.-B. Caillau was member of the 2017 PGMO days scientific committee.

9.1.1.2. Member of the Organizing Committees

- 09/2017: Mini-symposium "Geometric control & applications", 18th French-German-Italian conference on optimization, Paderborn (J.-B. Caillau)
- 11/2017: Mini-symposium "Optimal control & applications to biology", PGMO days 2017, Paris Saclay (J.-B. Caillau)
- 12/2017 (Dijon): Journées McTAO: event organized by the team with thee invited speakers and two from the team.

9.1.2. Scientific Events Selection

- J.-B. Caillau is member of the program committee of the Séminaire de géométrie hamiltonienne of Paris VI - UPMC.

9.1.3. Books

- B. Bonnard and J. Rouot, together with M. Chyba, have written the series of notes [17], soon to appear as Springer briefs Publications. They were the basis of courses at the Phd level given at the University of Burgundy and at the institute of Mathematics for industry at Fukuoka (Japan).
- J.-B. Caillau, together with M. Bergounioux, G. Peyré, C. Schnörr and T. Haberkorn, served as an editor for the volume [11]. With a focus on the interplay between mathematics and applications of imaging, the first part covers topics from optimization, inverse problems and shape spaces to computer vision and computational anatomy. The second part is geared towards geometric control and related topics, including Riemannian geometry, celestial mechanics and quantum control.

9.1.4. Journals

B. Bonnard is a member of the editorial board of the *Pacific Journal of Mathematics for Industry*.

9.1.5. Invited Talks

Jean-Baptiste Caillau:
02/2017: Séminaire ENAC, Toulouse
06/2017: Mathematical Control Theory, Porquerolles
07/2017: New Horizons on Optimal Control, Porto
11/2017: PGMO Days 2017, Paris Saclay (with Barlaud, M.; Gilet, C.)

Laetitia Giraldi:
03/2017: Seminar at University Paris Dauphine
05/2017: Speaker at a meeting of the IPL Algae in Silico
09/2017: Seminar at Gibsa-lab, *Grenoble*
10/2017: Speaker at Interaction Fluide-Structure: Analyse et Contrôle
11/2017: Seminar at Institut de Recherche Mathématiques Avancée, *Strasbourg*

Michaël Orieux:
09/2017: Workshop on Classical Integrability and Perturbations, *Paris*

Jean-Baptiste Pomet:
09/2017: Séminaire de géométrie hamiltonienne of Paris VI - UPMC.

Ludovic Rifford:
07/2017: Plenary speaker at the Pan African Congress of Mathematics, *Rabat (Morocco)*
07/2017: Plenary speaker at the conference New Trends in Control Theory and PDEs, *INdAM, Rome (Italy)*
09/2017: Plenary speaker at the Conférence à la mémoire d'Ahmad El Soufi, *Université François Rabelais, Tours (France)*

9.1.6. *Research Administration*

Jean-Baptiste Caillau has been the joint head of the CNRS team Statistique, Probabilités, Optimisation & Contrôle at Institut math. Bourgogne. He is member of the Scientific Committee of the GdR Calcul, of the Institut de Mécanique Céleste et de Calcul des Éphémérides (Observatoire de Paris), and of the Programme Gaspard Monge pour l'Optimisation et la recherche opérationnelle de la Fondation Mathématique Jacques Hadamard.

From 2017 Laetitia Giraldi is member of CSD *Comité du suivi Doctoral* at Sophia-Antipolis.

Jean-Baptiste Pomet is a member of the steering committee of the Center for Planetary Origin (C4PO) and of the scientific council of Académie 2 "Complex system", both for Université Côte d'Azur (UCA). He is an elected member of Commission d'évaluation (Inria permanent evaluation committee).

Ludovic Rifford has been Executive Director of the CIMPA (Centre International de Mathématiques Pures et Appliquées) since September 2016.

9.2. Teaching - Supervision - Juries

9.2.1. *Teaching*

Licence : Laetitia Giraldi, Colles de Mathématiques en MPSI et MP, 110heures en équivalent TD, niveau (L1, L2, L3), Lycée internationale de Valbonne, France. J.-B. Caillau, Processus Stochastiques, 50 H ETD, Polytech Nice-Sophia.

Master : Laetitia Giraldi, Théorie du Contrôle appliquée à des problèmes de micro-natation, 4 heures en équivalent TD, niveau M2, université de Strasbourg, France. J.-B. Caillau, Commande optimale, 50 H ETD, Polytech Nice-Sophia ; Optimisation, 30 H ETD, Univ. Côte d'Azur.

Doctorat : Laetitia Giraldi, Controlled propulsion of elastico-magnetic micro-swimmer, 4 heures en équivalent TD, université de Padoue, Italie

9.2.2. *Supervision*

M2: Yacine El Alaoui-Faris: "Machine Learning for Biology ", supervised by J.-B. Caillau, April to September.

PhD: Zeinab Badreddine, "Mass transportation in sub-Riemannian structures admitting singular minimizing geodesics", defended December 4, 2017, co-supervised by B. Bonnard and L. Rifford. See bibliography.

PhD in progress : Michaël Orieux, "Minimum time control and applications", started September, 2015, co-supervised by J.-B. Caillau and J. Féjoz (Univ. Paris Dauphine).

PhD in progress : Alice Nolot, "Sub-Riemannian geometry and optimal swimming at low Reynolds, started October, 2016, supervised by B. Bonnard.

PhD in progress : Sébastien Fueyo, "Testing stability of nonlinear amplifier by frequency-domain methods", started October, 2016, co-supervised by J.-B. Pomet and L. Baratchart (APICS team).

PhD in progress : Yacine El alaoui-faris, "modeling magnetico-elastic micro-robot from theory to experiment", started October, 2017, co-supervised by L. Giraldi, J.-B. Pomet and Stephane Régnier (Univ. Paris Sorbonne).

PhD in progress : Clément Moreau, "Contrôlabilité de systèmes en dimension finie ou infinie issus du vivant", started September, 2017, co-supervised by L. Giraldi, Pierre Lissy and J.-B. Pomet.

PhD in progress : Karine Sérier, "Micro-natation et invariants de la géométrie sous-Riemannienne", started September, 2017, supervised by B. Bonnard.

9.2.3. *Juries*

J.-B. Caillau has been reviewer for the Habilitation of Aude Rondepierre (Toulouse), and for the PhD's of Cécile Carrere (Marseille), Clément Gazzino (Toulouse), and Ouazna Ouchaka (Toulon). He has also been member of the Habilitation jury of Marco Caponigro (Paris).

J.-B. Caillau and L. Giraldi are members of the jury of Agrégation de mathématiques.

Ludovic Rifford has been reviewer for the PhD of Sebastiano Nicolussi Golo (University of Jyvaskyla, Finland).

9.3. Popularization

J.-B. Caillau participates in the MASTIC initiative at Inria and has given conferences at the high school level in Sophia (MathC2+ event, June 2017) and Grasse (Lycée Amiral, Sep. 2017).

<p align="center" style="color:red">NACHOS Project-Team</p>

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

The team has organized the first workshop of the CLIPhTON (advanCed numericaL modelIng for multiscale and multiphysics nanoPhoTONics) network that took place at the Inria Sophia Antipolis-Méditerranée research center on November 30-December 1st, 2017.

8.1.2. Invited Talks

Claire Scheid, "Numerical contributions in nanophotonics" Women in PDE's @ Karlsruhe, KIT, Karlsruhe, Germany, April 27-28 2017.

Claire scheid, "A structure preserving numerical discretization framework for the Maxwell Klein Gordon equations in 2D", CRC Seminar, KIT, Karlsruhe, 22 June 2017

Stéphane Lanteri, "Méthodes de type élément fini hybride d'ordre élevé et solveurs par décomposition de domaine pour le calcul de DAS et de SER", Journée Electromagnétisme et Guerre Electronique, Toulouse, France, November 23, 2017.

Stéphane Lanteri, "High order hybridized methods for time-domain and frequency-domain electromagnetics", Congrés Mathias 2017, Paris, France, October 25-27, 2017.

Stéphane Lanteri, "High order DG methods for computational electromagnetics", Barcelona Supercomputing Center, Barcelona, Spain, September 15, 2017.

Stéphane Lanteri, "Discontinuous Galerkin method for computational nanophotonics", Institut Fresnel, Marseille, France, June 9, 2017.

8.1.3. Scientific Expertise

Stéphane Lanteri is a member of the Scientific Committee of CERFACS.

8.1.4. Research Administration

Stéphane Descombes is the head of the Center of Modeling, Simulation and Interactions (MSI) of the UCA JEDI Excellence Initiative. See also: http://univ-cotedazur.fr/en/uca-innovation/msi/home.

Stéphane Lanteri is a member of the Project-team Committee's Bureau of the Inria Sophia Antipolis-Méditerranée research center.

Stéphane Lanteri is a member of the Sciences Fondamentales et Appliquées Doctoral School Committee.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Stéphane Descombes, *Scientific computing*, M1, 36 h, University Côte d'Azur.

Stéphane Descombes, *Principal components analysis*, M2, 30 h, Université Nice Sophia Antipolis.

Stéphane Lanteri, *High performance scientific computing*, MAM5, 24 h, Polytech Nice Sophia.

Claire Scheid, *Analyse, Lecture and practical works*, Master 2 Agrégation, 27h, University Côte d'Azur.

Claire Scheid, *Analyse Hibertienne et analyse de Fourier, Practical works*, Master 1 MPA, 36h, University Côte d'Azur.

Claire Scheid, *Méthodes numériques en EDP, Lectures and practical works*, Master 1 MPA and IM, 63h, University Côte d'Azur.

Claire Scheid, *Option Modélisation, Lectures and practical works*, Master 2 Agrégation, 48h, University Côte d'Azur.

8.2.2. Supervision

PhD in progress: Alexis Gobé, *Multiscale hybrid-mixed methods for time-domain nanophotonics*, November 2016, Stéphane Lanteri.

PhD in progress: Nikolai Schmitt, *Numerical modeling of electron beam interaction with nanostructures*, October 2015, Stéphane Lanteri and Claire Scheid.

PhD in progress: Georges Nehmetallah, *Efficient finite element type solvers for the numerical modeling of light transmission in nanostructured waveguides and cavities*, November 2017, Stéphane Descombes and Stéphane Lanteri.

<p align="center" style="color:red">TOSCA Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Promotion of Mathematics in the industry

- M. Deaconu is involved in the Fédération Charles Hermite Forum which will be held in Nancy in January 2018.
- A. Lejay has been appointed as representative of the Agence Mathématiques et Entreprise (AMIES) for the Grand-Est Region.
- D. Talay continued to serve as a member of the Scientific Committee of the AMIES National Agency aimed to promote interactions between Mathematics and Industry.
- D. Talay continued to serve as the Vice-President of the Fondation d'Entreprise Natixis which aims to contribute to develop research in quantitative finance. He also serves as a member of the Scientific Committee of the Foundation.

10.1.2. Scientific Events Organisation

- M. Bossy co-organized the Closing workshop of the project MECASIF On reduced order methods for wind and marine current power held at Inria Sophia Antipolis, February 20-22, 2017.
- M. Bossy co-organized the Wokshop EDF-UCA : HPC and fluid flow held at Inria Sophia Antipolis, November 23 - 24, 2017.
- N. Champagnat co-organizes with Marianne Clausel (Univ. de Lorraine) the weekly Seminar of Probability and Statistics of IECL, Nancy.
- D. Talay and N. Touzi (Ecole Polytechnique) organized and chaired the conference 'PDE and Probability Methods for Interactions', Inria Sophia Antipolis, March 30-31, 2017 (https://project.inria.fr/pde2017/).
- D. Talay organized the workshop 'Singular Mckean-Vlasov Dynamics', Inria Sophia Antipolis, September 14-15, 2017.
- D. Villemonais and M. Kolb organized (Univ. of Paderborn) a workshop entitled "Quasistationary Distributions: Analysis and Simulation" at Paderborn in September 2017 (http://math.uni-paderborn.de/ag/arbeitsgruppe-wahrscheinlichkeitstheorie/forschung/konferenzen/).

10.1.3. Scientific Events Selection

10.1.3.1. Member of the Conference Program Committees

- A. Lejay is member of the conference program committees of *Journées de Probabilités 2017* (Aussois, France) and of CEMRACS 2017.
- D. Talay is serving as a member of the ICMNS 2018 Conference Program Committee.

10.1.4. Journal

10.1.4.1. Member of the Editorial Boards

- N. Champagnat serves as an Associate Editor of *Stochastic Models* and of *ESAIM: Probability & Statistics* until June.
- N. Champagnat was co-editor-in-chief with Béatrice Laurent-Bonneau (IMT Toulouse) of *ESAIM: Probability & Statistics* since June.
- A. Lejay is one of the three editors of the *Séminaire de Probabilités* and *Mathematics and Computers in Simulation* (MATCOM).

- D. Talay serves as an Associate Editor of *Stochastic Processes and their Applications*, *Probability, Uncertainty and Quantitative Risk*, *ESAIM Probability and Statistics*, *Stochastics and Dynamics*, *Journal of Scientific Computing*, *Monte Carlo Methods and Applications*, *Oxford IMA Journal of Numerical Analysis*, *SIAM Journal on Scientific Computing*, *Communications in Applied Mathematics and Computational Science*, *Éditions de l'École Polytechnique*. He also serves as Co-editor in chief of *MathematicS in Action*.

10.1.4.2. Reviewer - Reviewing Activities

- M. Deaconu wrote reviews for manuscripts submitted to *Proceedings of the London Mathematical Society*, *Journal of Computational and Applied Mathematics* and *Mathematics and Computers in Simulation*.
- C. Fritsch wrote reviews for manuscripts submitted to *Journal of Biological Systems* and *Chaos, Solitons & Fractals*.
- A. Lejay wrote reviews for *Stochastic Processes and Their Applications*, *Séminaire de probabilités*, *Annals of Applied Probability*, *Physical Review E*, *Mathematical Methods of Operations Research*, *Bulletin des Sciences Mathématiques*, *Boundary Value Problems* , *Journal of Hydrology*, *Electronic Journal of Probability*, *Quantitative Finance and Economics* and *Journal of Theoretical Probability*.
- D. Talay reported on applications to the Swiss National Science Foundation (SNSF).
- D. Talay reported on an application to the FONDECYT Program, Chile.
- D. Talay reported on applications to the Research Grants Council (RGC) of Hong Kong.
- D. Talay reported on manuscripts submitted to *Electronic. J. of Probability*, *SINUM*, *Annals Applied Probab.*, *J. Mathématiques Pures et Appliquées*.
- E. Tanré wrote reviews for manuscripts submitted to *European Journal of Applied Mathematics*.
- E. Tanré serves has a permanent reviewer of *Mathematical Reviews of the American Mathematical Society (MathSciNet)*.
- D. Villemonais wrote reviews for *Mathematical Reviews of the American Mathematical Society (MathSciNet)* and for manuscripts submitted to *Complexity*, *Journal of Mathematical Biology* and *Annals of Applied Probability*.

10.1.5. Invited Talks

- M. Bossy has been invited to give a talk at the Forecasting and Risk Management for Renewable Energy conference in Paris June 7-9, 2017.
- M. Bossy has been invited to give a lecture talk at the CEMRACS in Marseille July 2017.
- M. Bossy has been invited to give a seminar talk at CMA MinesParisTech, in Sophia Antipolis November 2017.
- M. Bossy gave a talk at the International Workshop on BSDEs, SPDEs, Edinburgh 2017, at the MECASIF workshop, at the workshop on PDE and Probability Methods for Interactions, at theWorkshop on singular McKean Vlasov in Sophia Antipolis.
- N. Champagnat has been invited to give talks at the conference on *Ecology and evolutionary biology, deterministic and stochastic models* in Toulouse in October, at the Conference on *Quasistationary Distributions: Analysis and Simulation* in Paderborn, Germany in September, at the Workshop on *Singular McKean-Vlasov equations and their applications* in Sophia Antipolis in September, at the *Journées Scientifiques Inria 2017* at Sophia Antipolis in June, at the *Workshop on Multi-Scale Features of Selection in Population Genetics, Eurandom* in Eindhoven, The Netherlands in March and at the *Journées EDP pour la biologie évolutives* in Avignon in March.
- N. Champagnat has been invited to give seminar talks at the *Séminaire Modélisation Mathématiques et Calcul Scientifique de l'Institut Camille Jordan* in Lyon in November, at the *Séminaire du LPMA* in Paris 6 (UPMC) in February, at the *Séminaire de statistique* in Avignon in January, at the *Séminaire de probabilités et statistique du LMV* in Versailles in January and at the *Séminaire Calcul Stochastique de l'IRMA* in Strasbourg in January.

- N. Champagnat gave a colloquium talk at the *Colloquium of the Mathematical Institute* in Mainz, Germany in February.

- N. Champagnat has been invited to give lectures at the *Workshop/School on Stochastic PDEs, Mean Field Games and Biology* (4h) at the Gran Sasso Science Institute (GSSI) in L'Aquila, Italy in September and at the *Doctoral School "New Trends in Markov Processes"* (6h) in Les Diablerets, Switzerland in March.

- M. Deaconu has been invited to give a talk at the *SIAM Conference on Control and its Applications*, 10-12 July 2017, Pittsburgh, USA.

- M. Deaconu has been invited to give a plenary talk at the *Forum des Jeunes Mathématicien-ne-s*, 22-24 November 2017, Nancy.

- M. Deaconu has been invited to give a seminar talk at the *Probability and Statistic Seminar* at the Institut de Mathématiques in Marseille, in November.

- C. Fritsch has been invited to give seminar talks in February at the probability seminars of Paul Painlevé laboratory in Lille and of Fourier Institute in Grenoble, at the meeting of the Chair *Modélisation Mathématique et Biodiversité* in the VEOLIA head office in Aubervilliers and in *MaIAGE seminar* of INRA in Jouy-en-Josas. She has also been invited to give talk at the annual *ModStatSAP* day in Paris in March and at the *HELENA seminar* of the Institute of Groundwater Ecology in Munich and at the *IRMAR probability seminar* in Rennes in June.

- C. Fritsch gave a talk at the conference *Mathematical Models in Ecology and Evolution* in London in July.

- P. Helson gave a talk at the workshop *Computational Neuroscience and Optical Dynamics* in Sophia-Antipolis in May.

- P. Helson presented a poster at the conference *International Conference on Mathematical Neuroscience* in Boulder (US) in June.

- A. Lejay gave a seminar talk at the *Séminaire EDP de l'Institut Élie Cartan de Lorraine* (Metz, France) in April 2017.

- A. Lejay gave talks at the national conference *Brownian motion in cones: algebraic and analytic approaches* at Toulouse in November and at the national conference *Journées de Probabilités 2017* at Aussois in June.

- A. Lejay gave a talk at the international conference *PDE & Probability Methods for Interactions* at Sophia-Antipolis, February 2013; *Monte Carlo Methods and Applications (MCM 2017)* at Montréal in July 2017; *Scicade 2017* at Bath in September 2017; *Rough Paths in Toulouse* at Toulouse in October 2017.

- P. Pigato has been invited to give seminar talks in January, at the Probability and Statistics Seminar of Laboratoire Jean Kuntzmann (Grenoble) and at the Seminar Modern Methods in Applied Stochastics and Nonparametric Statistics of WIAS Berlin.

- In January, Paolo Pigato has given a seminar talk at the Probability and Statistic Seminar of Institut Elie Cartan (Nancy).

- P. Pigato was invited to participate, from February 26th to March 4th, to the meeting "Mathematics of Quantitative Finance" in Oberwolfach, Germany.

- D. Talay gave a lecture at the workshop *Stochastic Differential Equations: Regularity and Numerical Analysis in Finite and Infinite Dimensions*, Mathematisches Forschungsinstitut Oberwolfach, February 5-11.

- D. Talay gave an invited conference at the Moscow National Research University Higher School of Economics, Laboratory of Stochastic Analysis winter meeting, December 4-7.

- D. Talay gave a seminar at Ecole Polytechnique on October 17th.

- E. Tanré gave talks at Université du Maine and Université de Savoie.

- E. Tanré was invited in Edinburg to give a talk at the International Workshop on BSDEs, SPDEs and their Applications in the McKean-Vlasov special session (July).
- E. Tanré was invited to give a talk at the workshop PDE/Probability Interactions: Kinetic Equations, Long time and Propagation of Chaos (Luminy, September).
- D. Villemonais has been invited to give seminar talks at the Stochastic Analysis Seminar of Imperial College (London, UK), at the Séminaire de probabilités of Université de Lille, at the Séminaire de probabilités of Université de Rennes and at the Probability laboratory of the Univeristy of Bath (UK).

10.1.6. Leadership within the Scientific Community

- M. Bossy is serving as a vice president of the Inria Evaluation Committee.
- A. Lejay is the head of the Probability and Statistics team of the Institut Élie Cartan since September 2016.
- A. Lejay is member of the Conseil de Perfectionnement of the Master of Mathematics of the Université de Lorraine.
- D. Talay continued to chair the Scientific Council of the French Applied Math. Society SMAI.
- D. Talay served as a member of the scientific council of the Complex System academy of the UCA Idex.
- D. Talay is serving as a member of the committee in charge of preparing the application of Paris to the International Congress of Mathematicians 2022.
- D. Talay is serving as a member of the CMUP Advisory Commission (University of Porto).
- D. Talay is a member of the Comité National Français de Mathématiciens.

10.1.7. Scientific Expertise

- M. Bossy reported for the Paul Caseau Prize.
- M. Bossy participated in a Associated Professor position recruitment committee at CMA Mines-ParisTech.
- N. Champagnat reported on an research project submitted to the Natural Sciences and Engineering Research Council (NSERC) of Canada.
- M. Deaconu has been a member of the *Committee for junior permanent research positions* of Inria Nancy - Grand Est.
- A. Lejay participated in a Professor position recruitment committee at Université de Lorraine.
- E. Tanré was member of the hiring committee 26 MCF at the 'Ecole Centrale de Paris'.
- E. Tanré reported on an application submitted to CONICYT (Chilean Funding Agency).
- D. Talay served as a member of the committee for positions in Applied Mathematics at the Ecole Polytechnique.
- D. Talay served as a member of the committee for a professor position at UCA University (Nice, France).
- D. Talay served as a member of the committee for an assistant professor position at Lille University.
- D. Talay is chairing the 2019 Pionneer ICIAM prize committee.

10.1.8. Research Administration

- M. Bossy has been a member of the DTK-Committee.
- N. Champagnat is a member of the *Comité de Centre*, the *COMIPERS* and the *Commission Information Scientifique et Technique* of Inria Nancy - Grand Est, *Responsable Scientifique* for the library of Mathematics of the IECL, member of the *Conseil du laboratoire* of IECL (as *responsable scientifique* of the library). He is local correspondent of the COERLE (*Comité Opérationel d'Évaluation des Risques Légaux et Éthiques*) for the Inria Research Center of Nancy - Grand Est. He is also local responsible of GdR MAMOVI for Univ. Lorraine.

- M. Deaconu is a member of the *Bureau du Comité de Projets* of Inria Nancy - Grand Est, and of the *Comité de Projet* of Inria Nancy - Grand Est.
- A. Lejay is member of the Pôle AM2I of the Université de Lorraine since 2017.
- A. Lejay is member of the theses committee of the Institut Élie Cartan de Loraine.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : M. Bossy, *Risk on energetic financial markets*, 27h, Master Spécialisé, Ingénierie et Gestion de l'Énergie, Mine ParisTech, France.

Master : M. Bossy *Stochastic Particle Methods for PDEs*, 18h, M2 Probabilité et Applications, Université Pierre et Marie Curie, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 18h, M1, École des Mines de Nancy, France.

Master: N. Champagnat, *Introduction to Quantitative Finance*, 13.5h, M2, École des Mines de Nancy, France.

PhD-level lecture: N. Champagnat, *Large population scalings of stochastic population dynamics in ecology and evolution*, Workshop/School on Stochastic PDEs, Mean Field Games and Biology, 6h, at the Gran Sasso Science Institute (GSSI) in L'Aquila (Italy).

PhD-level lecture: N. Champagnat, *Quasi-Stationary Distributions for absorbed Markov processes*, Doctoral School on *New trends in Markov Processes*, 9h, Les Diablerets (Switzerland).

Master: M. Deaconu, *Équations différentielles stochastiques : résolution numérique et applications*, 21h, M2, École des Mines de Nancy, France.

Master: M. Deaconu, *Modélisation stochastique*, 30h, M2, Université de Lorraine, France.

Master: M. Deaconu, *Simulation Monte Carlo*, 24h, M1, Faculté de Droit, Sciences Economiques et Gestion, Université de Lorraine, France.

Master : C. Fritsch, supervision of a research project on the *approximation of birth-death processes by stochastic differential equations*, 6h, M2, École des Mines de Nancy, France.

Master: A. Lejay, *Simulation des marchés financiers*, 28.5h, M2, Université de Lorraine (Metz), France.

Master: K. Salhi, *Statistiques et analyse de données*, 48h, M1, Télécom Nancy, France.

Master: K. Salhi, *Probabilité et Statistiques*, 48h, M1,ENSEM Nancy, France.

Licence: K. Salhi, *Probabilité et mathématiques financières*, 40h, L1, IUT Charlemagne, France.

Master: D. Talay *Invariant measures of diffusion processes*, 18h, M2 Probabilité et Applications, Université Paris 6, France.

Master: E. Tanré (courses) and M. Tomasevic (exercices), *Advanced Numerics for Computational Finance*, 30h (20h + 10h), M2, UCA (Mathmods Erasmus Mundus), France.

Master: E. Tanré, *Mathematical Methods for Neurosciences*, 37h, M2, ENS - Master MVA / Paris 6 - Master Maths-Bio, France.

Master: E. Tanré (courses) and M. Tomasevic (practical classes) *Numerical probability for mathematical finance*, 20h (8h + 12h), M2, EPU (Master IMAFA), France.

10.2.2. Supervision

PhD in progress: Antoine Brault, *Non-Linear Sewing Lemma*, Université Toulouse 3, October 2015, L. Coutin (U. Toulouse 3), A. Lejay.

PhD in progress: Lorenzo Campana, *Stochastic modeling of non-spherical particle transport and deposition by turbulent flows*, December 2017, M. Bossy.

PhD in progress: Quentin Cormier, *Biological Networks of Spiking Neurons*, September 2017, E. Tanré and R. Veltz (MATHNEURO Inria team).

PhD in progress: Pascal Helson, *Plasticity in networks of spiking neurons in interaction*, October 2016, E. Tanré and R. Veltz (MATHNEURO Inria team).

PhD: Radu Maftei, *Stochastic Analysis of Lagrangian Particle Simulation Application to colloidal particle collision*, Univ. Nice Sophia Antipolis, December 2017, M. Bossy.

PhD: Hernan Mardones, *Numerical solutions of stochastic differential equations with multiplicative noise*, Université de Concepción (Chile), June 2017, C. Mora (U. Concepción), A. Lejay.

PhD in progress: Milica Tomašević, *On a stochastic interpretation of parabolic-parabolic Keller-Segel systems*, October 2016, D. Talay.

10.2.3. Juries

- M. Bossy served as a referee for the Ph.D. theses of Gerome Faure *Stochastic Lagrangian models to better estimate energy production variability*.

- M. Bossy served as an examiner for the HDR of Ahmed Kebaier *Methodes Multilevel Monte Carlo et Statistiques des Processus en Finance*, Université Paris 13, December 2017.

- N. Champagnat served as a referee for the Ph.D. theses of Brice Samegni-Kepgnou, *Grandes Déviations de systèmes stochastiques modélisant des épidémies*, Aix-Marseille Univ., July 13, 2017, and of Nils Caillerie, *Équations cinétiques stochastiques et déterministes dans le contexte des mathématiques appliquées à la biologie*, Univ. Lyon 1, July 5, 2017.

- N. Champagnat served as an examiner for the Ph.D. thesis of Manon Baudel, *Théorie spectrale pour des applications de Poincaré aléatoires*, Univ. Orléans, December 1, 2017.

- M. Deaconu served as a referee for the Ph.D. thesis of Alizée Geeraert, *Contrôle optimal stochastique des processus de Markov déterministes par morceaux et application à l'optimisation de maintenance*, Université de Bordeaux, June 6, 2017.

- A. Lejay served as referee for the Ph.D. thesis of Yi Lu, *Calcul fonctionnel non-anticipatif et applications aux processus stochastiques*, Université Paris 6, December 2017.

- A. Lejay served as an examiner for the jury of Hernan Mardones, *Numerical solutions of stochastic differential equations with multiplicative noise*, Université de Concepción (Chile) in June 2017.

- A. Lejay served as a referee for the Habilitation thesis of Ahmed Kebaier, *Méthodes Multilevel Monte Carlo et Statistiques des Processus en Finance*, Université Paris 13, December 2017.

- D. Talay served as a referee for the Ph.D. thesis of Liping Xu, *Contribution à l'étude de l'équation de Boltzmann homogène*, Université Pierre et Marie Curie, June 2017.

- D. Talay served as a referee for the Habilitation thesis of Jérôme Lelong, *Quelques contributions aux méthodes numériques probabilistes et à la modélisation stochastique*, Université Grenoble Alpes, September 2017.

- D. Talay served as a referee for the Habilitation thesis of Noufel Frikha, *Stochastic approximation, Markovian perturbation of stochastic processes and their applications*, University Paris-Diderot, November 2017.

- D. Talay served as an examiner for the Habilitation thesis of Xialou Tan, *Martingale optimal transport, non Markovian stochastic control and branching diffusion processes*, December 2017.

- D. Talay served as a referee for the Ph.D. thesis of Guillaume Sall, *Quelques algorithmes rapides pour la finance quantitative*, Sorbonne Universités, December 2017.

ABS Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. 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 2017 Edition, which took place at the CNRS center in Cargese, focused on *Protein design*, see https://algosb2017.sciencesconf.org/. It attracted 40 participants from worldwide institutions.

7.1.2. Scientific Events Selection

7.1.2.1. Member of Conference Program Committees

– Frédéric Cazals was member of the following program committees:

- Symposium On Geometry Processing
- Symposium on Solid and Physical Modeling
- Intelligent Systems for Molecular Biology (ISMB), PC member of Protein Interactions & Molecular Networks
- ACM Conference on Bioinformatics, Computational Biology and Biomedical Informatics
- JOBIM

7.1.3. Journal

7.1.3.1. Reviewer - Reviewing Activities

- Journal of mathematical biology
- Bioinformatics
- Journal of computational chemistry

7.1.4. Invited Talks

– Frédéric Cazals gave the following invited talks:

- *Beyond two-sample-tests: localizing data discrepancies in high-dimensional spaces*, NIPS workshop of Topological Data Analysis, Los Angeles, December 2017.
- *Modeling in structural bioinformatics: the tryptic structure - dynamics - function*, GDR Bioinformatique moléculaire, Paris, November 2017.
- *Modèles géométriques pour la prédiction des interactions macro-moléculaires*, seminar for the course *Géométrie algorithmique Données, Modèles, Programmes*, by Jean-Daniel Boissonnat, Chaire d'informatique et sciences numériques, Collège de France, March 2017.

7.1.5. Leadership within the Scientific Community

– Frédéric Cazals:

- 2010-.... Member of the steering committee of the *GDR Bioinformatique Moleculaire*, for the *Structure and macro-molecular interactions* theme.
- 2017-.... Co-chair, with Yann Ponty, of the working group / groupe de travail *(GT MASIM - Méthodes Algorithmiques pour les Structures et Interactions Macromoléculaires*, within the *GDR de BIoinformatique Moléculaire* (GDR BIM, http://www.gdr-bim.cnrs.fr/).

7.1.6. Research Administration

– Frédéric Cazals:

- 2017-.... President of the *Comité de suivi doctoral* (CSD), Inria Sophia Antipolis - Méditerranée. The CSD supervises all aspects of PhD student's life within Inria sophia antipolis.

– Dorian Mazauric:

- 2016-2019. Member of the *Comité de Centre*, Inria Sophia Antipolis - Méditerranée.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Master: Frédéric Cazals (Inria ABS) and Frédéric Chazal (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)

7.2.2. Supervision

PhD thesis, ongoing, 3rd year. Romain Tetley, *Structural alignments: beyond the rigid case*. Université Côte d'Azur. Under the supervision of Frédéric Cazals.

PhD thesis, ongoing, 3rd year. Augustin Chevallier, *Sampling biomolecular systems*. Université Côte d'Azur. Under the supervision of Frédéric Cazals.

PhD thesis, ongoing, 1st year. Denys Bulavka, *Modeling macro-molecular motions*. Université Côte d'Azur. Under the supervision of Frédéric Cazals.

PhD thesis, ongoing, 1st year. Méliné Simsir, *Modeling drug efflux by Patched*. Université Côte d'Azur. Thesis co-supervised by Frédéric Cazals and Isabelle Mus-Veteau, IPMC/CNRS.

Postdoctoral research of Rémi Watrigant, 2016 - 2017. Projet de Recherche Exploratoire (Inria). *Improving inference algorithms for macromolecular structure determination*. Under the supervision of Dorian Mazauric and Frédéric Havet (Inria COATI project-team).

7.2.3. Juries

– Frédéric Cazals:

- Clément Viricel, University of Toulouse, December 2017. Rapporteur on the PhD thesis *Contributions au développement d'outils computationnels de design de protéines : méthodes et algorithmes de comptage avec garantie*. Advisors: T. Schiex and S. Barbe.

7.3. Popularization

This section describes the activities of Dorian Mazauric (member of the popularization committee of Inria Sophia Antipolis - Méditerranée).

– **Founding**.

- Coordinator of the project GALEJADE (*Graphes et ALgorithmes : Ensembles de Jeux À Destination des Écoliers*) founded by Fondation Blaise Pascal (2017 - 2018). We aim at developing an educational kit for primary schools in order to play with the notions of graphs and algorithms. We also propose conferences for the general public.

– **Resources**.

- 13 posters - *Transmission de pensée - La magie du binaire*: [22].
- 2 posters - *Tour de cartes - La magie des graphes et du binaire*: [21].

– **Activities**.

- Training with Laurent Giauffret of 30 teachers (cycle 1) of Académie de Nice (*Jeux avec les graphes et les algorithmes*).

- Stage MathC2+: half day activities for 40 high school students (Boruvka algorithm for the minimum spanning tree problem played on "real" graphs constructed with plastic hoops and slats).

- Fête de la Science 2017

  – Village des sciences et de l'innovation au Palais des Congrès d'Antibes Juan-les-Pins.

  – Conferences (classe préparatoire, 2 classes de seconde, une classe de sixième, 2 classes de CM1).

- 4 conferences in high schools (Aix-en-Provence, Antibes, Grasse, Miramas), dispositif Science Culture PACA.

- One conference in a secondary school (French *college*) (Cagnes-sur-Mer).

ASCLEPIOS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- X. Pennec was co-chair of the MICCAI 2017 workshop on Mathematical Foundations of Computational Anatomy MFCA 2017 which was held in Quebec, Canada on September 14, 2017 and co-organiser of the Conference on Topological and Geometrical Structure of Information, held at CIRM Luminy (FR) on Aug.28 - Sept. 1 2017.
- M. Sermesant was a co-chair of the MICCAI 2017 Workshop Statistical Atlases and Computational Models of the Heart (STACOM 2017), which was held in Quebec City, Octobre 10, 2017.
- H. Delingette was a member of the organizing committee of the two scientific days at Inria Sophia Antipolis (July 6th and Dec 4th) presenting the activities of the UCA academy on "Networks, Information and Digital Society".

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- X. Pennec was a member of the paper selection committe of the Conference Information processing in Medical Images (IPMI 2017) held at Boone, NC, USA, June 25-30 2017; area chair of the International Symposium on Biomedical Imaging ISBI 2017; member of the scientific committee of the 3rd conference on Geometric Science of Information GSI2017, Novembre 7-9 2017, Paris (France).
- H. Delingette was program committee member of the conference on the MICCAI 2017 workshop on Simulation and Synthesis of Medical Imaging (SASHIMI'17).

9.1.2.2. Reviewer

- M. Lorenzi was a reviewer for the conferences Neural Information Processing Systems (NIPS 2017), Medical Image Computing and Computer Aided Intervention (MICCAI 2017), International Conference on Learning Representations (ICLR 2018), IEEE International Symposium of Biomedical Imaging (ISBI 2017-18), Information Processing in Medical Imaging (IPMI 2017).
- X. Pennec was a reviewer for the ICCV International Workshop on Manifold Learning: from Euclid to Riemann (MANIFLEARN2017) and the 3rd CVPR International Workshop on DIFFerential Geometry in Computer Vision and Machine Learning (DIFF-CVML 2017).
- H. Delingette was a reviewer for the International Symposium on Biomedical Imaging (ISBI'17), the international conference Functional Imaging and Modeling of the Heart (FIMH 2017),the international conference on computer-aided interventions (IPCAI'17), the conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2017), the International Conference on Computer Vision and Pattern Recognition (CVPR 2017).
- M. Sermesant was a reviewer for the MICCAI 2017 and FIMH 2017 conferences.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- N. Ayache is the co-founder and the Co-Editor in Chief with J. Duncan (Professor at Yale) of Medical Image Analysis journal. This scientific journal was created in 1996 and is published by Elsevier.

- N. Ayache is 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).

- 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).

- M. Lorenzi is a member of the editorial board of the journal Scientific Reports (Nature Publishing Group); he is also member of the Board of Statisticians of the Journal of Alzheimer's Disease (IOS Press).

9.1.3.2. Reviewer - Reviewing Activities

- M. Lorenzi was a reviewer for the following journals: Neurobiology of Aging, Alzheimer's and Dementia, Journal of Alzheimer's Disease, Medical Image Analysis, IEEE Transactions on Medical Imaging, NeuroImage, International Journal of Computer Vision, Journal of Mathematical Image and Vision, IEEE Transactions on Biomedical Engineering, Human Brain Mapping, Scientific Reports, Neural Computation.

- X. Pennec was a reviewer for the following journals: Proceedings on the London Mathematical Society (PLMS), Journal of mathematical imaging and vision (JMIV), Journal of Machine Learning Research (JMLR), NeuroImage (NIMG), Foundations of Computational Mathematics (FoCM), International Journal of Computer Vision (IJCV), SIAM journal on Imaging Sciences (SIIMS), Medical Image Analysis (MedIA).

- H. Delingette was a reviewer for the following journals: Medical Image Analysis (Elsevier), IEEE Transactions in Medical Imaging, IEEE Transactions in Biomedical Engineering, Biomedical Engineering, Computers in Biology and Medicine.

- 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

- **M. Lorenzi** was invited as lecturer at the Mathematical Models In Biomedical Imaging Summer School, organized by the University of Granada, Spain, on July 2017.

- **X. Pennec** was a keynote speaker of the 3rd Int. W on Differential geometry in Comp. Vis. and Machine Learning (DIFF-CVML), Hawaii, USA, 21 July 2017 and at the Computational Brain Connectivity Mapping Winter School Workshop CoBCoM, November 20-24 2017, Juan-les-Pins, France. He was also invited to the MIT CSAIL Seminar series, Cambridge, MA, September 8 2017 and an Imaging Genetics Center Seminar at USC, Marina del Rey, Los Angeles, CA, USA, 19 July 2017.

- **H. Delingette** was a keynote speaker at the Euromech conference in Lille, an invited speaker at the GDR Mamovi in Lyon, at the Computer Vision Seminar at UPF in Barcelona.

- **M. Sermesant** was a keynote speaker at the FIMH conference in Toronto, and an invited speaker at the VT/VF Symposium in Berlin, and the TRM Forum in Lugano.

- **N. Ayache** gave the following plenary invited talks in 2017:
  - From Cardiac Images to Digital Hearts ; Inria 50th anniversary, Paris
  - From Medical Images to Digital Patients, Inria 50th anniversary, Sophia,
  - Important MICCAI contributions of the past 20 years, MICCAI, Québec,
  - Le patient numérique, Académie Nationale de Chirurgie, Paris,
  - Images, informatique et médecine : Institut Mondor de recherche biomédicale, Créteil.

9.1.5. Leadership within the Scientific Community

- **H. Delingette** is a member of the MICCAI Society Board of Directors.
- **Nicholas Ayache** is a member of the French Academy of Sciences in the section of Mechanics and Informatics. He was elected a free member of the French Academy of Surgery on 6 Dec. 2017. He became an officer of the order of the "Palmes Académiques" on 14 Jul. 2017.

9.1.6. Scientific Expertise

- **Xavier Pennec** was an evaluator for the European Research Concil (ERC) and the French Agence Nationale pour la Recherche (ANR).
- **M. Lorenzi** was reviewer of the granting agencies ANR (Agence Nationale de la Recherche, France) and EPSRC (Engineering and Physical Sciences Research Council, UK).
- **H. Delingette** was an evaluator for the European Research Concil, for the Research Council of KU Leuven.
- M. Sermesant was an evaluator for the Aquitaine region, the Dutch adn the Swiss research councils.
- **Nicholas Ayache** is a member of the scientific council of the Ile de France region since 2016.

9.1.7. Research Administration

- **Xavier Pennec** is co-director and at the board of the Ecole doctorale STIC of Université Côte d'Azur. He is a member of the Doctoral follow-up Committee (CSD) at Inria Sophia Antipolis, of the the "Comité de la Recherche Biomédicale en Santé Publique (CRBSP)" of the Nice hospitals and in charge of the relationships of Inria-Sophia with the Nice University Hospital (CHU).
- **Marco Lorenzi** is is a member of the local steering committee of the technological platforms (Comités Scientifiques de Pilotage des Plateformes) in charge of Cluster, Grid, Cloud, and HPC technologies.
- **Hervé 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. He is the coordinator of the Academy of excellence on "Networks, Information and Digital Society" at the Université Côte d'Azur.

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

Master: X. Pennec and H. Delingette, 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.

Master: X. Pennec is co-responsible of the Master CBB - Computational Biology and Biomedicine, Univ. Nice-Sophia Antipolis.

9.2.2. Theses Defended

- 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. Defended on July 3rd, 2017

- 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. Defended on 11th December 2017

- 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. Defended on December 19th, 2017

- 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. Defended on July the 4th, 2017

- 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. Defended on November 20th, 2017

9.2.3. PhD in progress

- 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 and co-supervised by M. Lorenzi and X. Pennec.

- 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.

- Qiao Zheng, Deep learning for cardiac image analysis, Nice Sophia Antipolis University. Started in January 2016. Co-directed by N. Ayache and H. Delingette.

- Shuman Jia, Population-based Model of Atrial Fibrillation: from Shape Statistics to Group-wise Physiology, Nice Sophia Antipolis University. Started in 2016. Co-directed by M. Sermesant and X. Pennec.

- Wen Wei, Learning Brain Alterations in Multiple Sclerosis from Multimodal Neuroimaging Data, Nice Sophia Antipolis University. Started in 2016. Co-directed by N.Ayache and O.Colliot.

- Julian Krebs, Robust image registration based on machine learning, Nice Sophia Antipolis University. Started in 2016. Co-directed by H. Delingette and N. Ayache.

- Luigi Antelmi, Statistical learning on large databases of heterogeneous imaging, cognitive and behavioural data, Nice Sophia Antipolis University. Started in 2017. Co-directed by P. Robert and N. Ayache and supervised by M. Lorenzi.

- Clément Abi-Nader, Statistical Learning of Heterogeneous Data in Large-Scale Clinical Databases, Nice Sophia Antipolis University. Started in 2017. Co-directed by P. Robert and N. Ayache and supervised by M. Lorenzi.

- Jaume Banús Cobo, Heart & Brain: discovering the link between cardiovascular pathologies and neurodegeneration through biophysical and statistical models of cardiac and brain images., Nice Sophia Antipolis University. Started in 2017. Directed by M. Sermesant and co-supervised by Marco Lorenzi.

- Tania-Marina Bacoyannis, Cardiac Imaging and Machine Learning for Electrostructural Tomography, Nice Sophia Antipolis University. Started in 2017. Co-directed by M. Sermesant and H. Cochet.

- Pamela Moceri, From normal right ventricle to pathology: shape and function analysis with different loading conditions using imaging and modelling. Started in 2015. Directed by M. Sermesant.

9.2.4. Juries

- Xavier Pennec was supervisor or co-supervisor of the PhD theses of Loïc Devilliers (Univ. of Nice Sophia Antipolis), Marc-Michel Rohé (Univ. of Nice Sophia Antipolis) and Roch Molléro (Univ. of Nice Sophia Antipolis). He was also reviewer and member of the jury of the HDR of Joan Alexis Glaunes (Université Paris Descartes), reviewer and member of the jury of the PhDs of Remi Agier (INSA Lyon) and Alice Le Bruiguant (Univ. Bordeaux) and member of the PhD jury of Jean-Baptiste Schiratti (Ecole Polytechnique).

- Marco Lorenzi was jury member for the PhD probation exam (in April 2017) of Kurt Kutajar and Remi Domingues, students of the EURECOM research institute, France.

- Hervé Delingette was co-supervisor of the PhD thesis of T. Demarcy (Univ. of Nice Sophia Antipolis). He was a reviewer in the PhD thesis committee of C. Paulus (Univ. of Strasbourg), of Mikael Agn (Danish Technical University, Lingby, Danemark), of N. Mangado (Univ. Pompeu Fabra, Barcelone), of M. Hafri (Univ. Orléans). He was a member of the PhD thesis committee of Sophie Giffard-Roisin (Univ. of Nice Sophia Antipolis), and Roch Philippe Mollero (Univ. of Nice Sophia Antipolis).

- Maxime Sermesant was a reviewer and a member of the PhD jury of Corentin Dallet, Bordeaux University (Nov 23) and of the HDR jury of Ed Vigmond, Bordeaux University (Jan 13).

9.3. Popularization

M. Lorenzi gave a general audience lecture during the "Semaine du Cerveau" at the CHU of Nice (March 2017).

Nina Miolane participated to the following popularization events:

- Speaker at Unesco France's Ceremony for 70th Anniversary.
- Speaker at the Women Forum Global Meeting 2016. How to bring more women in the sci-tech workforce?
- Speaker at the L'Oreal-Unesco Prizes Ceremony 2016.
- Journal regional de France 3 Azur (Oct. 31 2016)
- Invited on "Le Club de la Tete au Carre". France Inter (National Radio), Oct. 14 2016.

<h2 style="color:red; text-align:center">ATHENA Project-Team</h2>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

R. Deriche and S. Deslauriers-Gauthier organized the CoBCoM Winter School Workshop in Juan Les Pins from November 20 to 24, 2017. Organized within the framework of the ERC CoBCoM and targeted at graduate students, early career and senior researchers interested in structural and functional brain connectivities via multi imaging modalities including diffusion MRI, functional MRI, MEG, and EEG, this Winter School Workshop offered several tutorials and advanced lectures from more than 20 leading researchers and experts on Computational Brain Connectivity Mapping. In addition, it included 3 sessions dedicated to 27 posters presentations from participants.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- T. Papadopoulo is member of the Program Commitee of GRETSI 2017.
- D. Wassermann serves as part of the Conference Program of MICCAI 2017; IPMI 2017; and ISMRM 2017.

10.1.2.2. Reviewer

- M. Clerc serves several international institutions in reviewing applications : ERC, FET-Open, ANR-NSF.
- M. Clerc serves several international conferences (Graz International BCI Conference, BaCI, IEEE EMBC Neural Eneering).
- R. Deriche serves several international institutions in reviewing applications : ERC Grants, Swiss National Science Foundation, the Netherlands Organisation for Scientific Research (NWO)...
- R. Deriche serves several international conferences (ISBI, MICCAI, ISMRM, ...) and international workshops (CD-MRI Miccai, MFCA Miccai...).
- T. Papadopoulo serves several international conferences as a reviewer (GRETSI, ICIP, ISBI).
- D. Wassermann serves several international conferences as a reviewer (MICCAI, ISMRM, HBM, CDMRI, etc)
- D. Wassermann serves several international institutions in reviewing applications: ANR, the Netherlands Organisation for Scientific Research (NWO), ERC FET program, Argentina MINCyT.

10.1.3. Journal

10.1.3.1. Member of 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 the Journal of Neural Engineering, and of the ISTE-Wiley book series.

10.1.3.2. Reviewer - Reviewing Activities

- M. Clerc serves several international journals (Brain Topography, Trends in Biotechnology, Journal of Neural Engineering, Biomedical Engineering OnLine).
- 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, ...).
- T. Papadopoulo serves several international journals (NeuroImage, Frontiers Neuroscience, IEEE PAMI, Pattern Recognition, ...).
- D. Wassermann serves several international journals (NeuroImage, IEEE Transactions on Medical Imaging, Human Brain Mapping, Medical Image Analysis Journal, ...).

10.1.4. Invited Talks

- M. Clerc gave several invited talks: MiniCours axe MTC-NSC in Sophia Antipolis, Journées des Jeunes Chercheurs en Interfaces Cerveau Ordinateurs in Bordeaux, CoBCoM in Antibes.
- R. Deriche gave an invited talk at Huawei Vision Forum, Le Phébus.
- T. Papadopoulo gave an invited talk at CoBCoM in Antibes.
- D. Wassermann gave several invited talks at international institutions including Stanford Medical School, USA; National University of the South, Argentina; Brain and Spine Institute, and NeuroSpin, France

10.1.5. Leadership within the Scientific Community

- M. Clerc is in charge of the BCI-LIFT Inria Project Lab. She is also a founding member and vice-president of the CORTICO association (Collectif pour la Recherche Transdisciplinaire sur les Interfaces Cerveau Ordinateur), the French association for BCI.
- R. Deriche is the P.I. of the ERC AdG COBCOM.
- D. Wassermann is the P.I. of the ERC StG NEUROLANG, ANR-NSF NEUROREF, and the Associated Team LARGEBRAINNETS

10.1.6. Scientific Expertise

- M. Clerc is a member of the Inria Evaluation Committee since 2015.
- M. Clerc is a member of the Scientific Committee of Académie 4 of Université Côte d'Azur.
- M. Clerc is a member of the Steering Committee of the Magneto-Encephalography Platform of La Timone, Marseille.
- R. Deriche is a member of the Scientific Committee of Académie 2 of Université Côte d'Azur.
- R. Deriche serves several international institutions in reviewing applications : ERC Grants, Swiss National Science Foundation, the Netherlands Organisation for Scientific Research (NWO).
- D. Wassermann serves several international institutions in reviewing applications: ANR, the Netherlands Organisation for Scientific Research (NWO), ERC FET, Argentine MINCyT

10.1.7. Research Administration

- M. Clerc is Déléguée Scientifique Adjointe (vice-head of Science) of the Sophia Antipolis Inria Research Center since 2014.
- M. Clerc is member of the Commission Scientifique Interne (CoSI) of Inria since 2014.
- M. Clerc was vice-president of the hiring committee for CR2 at Inria Sophia Antipolis in 2017.
- M. Clerc was a member of the CR1 hiring committee at Inria in 2017.
- R. Deriche is member of the Academic Council of UCA (Université Côte d'Azur)
- R. Deriche is member of the Scientific Council of Académy 2 *Complex Systems*, Université Côte d'Azur and member of the Scientific Council of Olea Medical Company (http://www.olea-medical. com/

- T. Papadopoulo represents Inria at the Administration Council of the CIU Santé.
- T. Papadopoulo is member of the Software Development Committee at Inria.
- T. Papadopoulo is the head of the DTK platform committee of the Sophia Antipolis Inria Research Center since 2016.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

BS : M. Clerc made a presentation to medical school students enrolled in "Ecole de l'Inserm", in Sèvres.

Master: M. Clerc taught a course on "Brain Machine Interfaces" at Sciences Po, Paris, in a Master program on "Disruptive Technologies and Public Policies".

Master: R. Deriche, Variational approaches and Geometrical Flows for Computational Brain Imaging, 36 ETD, M2 "Computational Biology and Biomedicine", Université Côte d'Azur. France.

Master: R. Deriche, Advanced Image Processing Techniques, 12 ETD, M1 International CBB & Ubinet, Université Côte d'Azur, France.

Master: T. Papadopoulo, *3D Computer Vision*, 12 ETD, M1 International Ubinet, Université Côte d'Azur. France.

Master: T. Papadopoulo, *Inverse Problems in Brain Functional Imaging*, 36 ETD, M2 "Computational Biology and Biomedicine", Université Côte d'Azur. France.

Master: T. Papadopoulo, *Inverse problems for brain functional imaging*, 24 ETD, M2, Mathématiques, Vision et Apprentissage, ENS Cachan, France.

Master: D. Wassermann, *Fundamentals of Computer Science*, 36 ETD, M2 "Computational Biology and Biomedicine", Université Côte d'Azur. France.

Master: D. Wassermann, *Machine Learning in Neuroimaging*, 36 ETD, National University of the South, Argentina.

10.2.2. Supervision

PhD defended [13]: Rutger Fick, "Microstructure Recovery via dMRI", Université Côte d'Azur. Supervisor: Rachid Deriche.

PhD defended [12]: Kai Dang, "Modeling and characterizing electrical conductivity for cochlear implantation", started Dec. 2013, Université Université Côte d'Azur. Supervisor: Maureen Clerc.

PhD defended [15]: Marco Pizzolato, "Diffusion & Perfusion MRI: From bench to bedside" started Dec. 2013, Université Côte d'Azur. Supervisor: Rachid Deriche.

PhD defended [11]: Brahim Belaoucha, "Using diffusion MR information to reconstruct networks of brain activations from MEG and EEG measurements", Université Côte d'Azur, started Oct. 2013. Supervisor: Théodore Papadopoulo.

PhD defended [14]: Christos Papageorgakis, "Patient-specific conductivity models: characterization of the skull bones", Université Côte d'Azur. Supervisor: Juliette Leblond, Co-supervisor: Maureen Clerc

PhD defended: Lorraine Perronnet, "Combining EEG and FMRI for Neurofeedback", Université Rennes 1. Supervisors: Christian Barillot and Anatole Lécuyer, Co-supervisor: Maureen Clerc.

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: Abib Alimi, "Diffusion & PLI" started Nov, 1st, 2016, Université Côte d'Azur. Supervisor: Rachid Deriche.

PhD in progress: Isa Costantini, "Brain Connectomics" started Oct. 1st, 2016, Université Côte d'Azur.. Supervisor: Rachid Deriche.

PhD in progress: Kostiantyn Maksymenko, "Inverse problem in EEG/MEG/SSEG: towards a better consideration of anatomo-functional constraints", Université Côte d'Azur,, started Oct. 2016. Supervisors: Théodore Papadopoulo and Maureen Clerc.

PhD in progress: Guillermo Gallardo Diez, "Connectivity-Based Brain Parcellation", started Nov. 2015, Université Côte d'Azur. Supervisors: D. Wassermann and R. Deriche

PhD in progress: Antonia Machlouzarides-Shalit, "Semantic Representations of Brain Anatomy", started Jun. 2017, Université Paris Sud. Supervisor: D. Wassermann

PhD in progress: Nathalie Gayraud, "Structured Dictionary Learning", Université Côte d'Azur, started November 2015. Supervisor: Maureen Clerc.

PhD in progress: Federica Turi, "User-adapted Brain Computer Interaction", Université Côte d'Azur, started October 2016. Supervisor: Maureen Clerc.

Master: Paul Görlach, "Rotational Invariants of Ternary Quartics", Supervised by E. Hubert and T. Papadopoulo.

Master: Gaston Zanitti, "An ADMM Algorithm for Regularised Random Effect Representations of Anatomo-Functional Connectivity", Supervised by D. Wassermann.

10.2.3. Juries

- R. Deriche chaired the HDR jury of P. Montesinos at LIRMM, UMR 5506 CNRS - Université Montpellier, June 9, 2017.
- R. Deriche chaired the PhD jury of B. Belaoucha at Université Côte d'Azur, May 29, 2017.
- R. Deriche participated as a reviewer in the PhD jury of T.C.J. Dela Haije at TU/e Eindhoven University of Technology, May 16, 2017.
- R. Deriche participated as a reviewer in the PhD Jury of R. Hedouin at Université de Rennes 1, June 12, 2017.
- R. Deriche participated in the PhD jury of C. Lian at Université de Technologie de Compiègne., Jan. 27, 2017.
- R. Deriche participated in the PhD jury of R. Fick at Université Côte d'Azur, March 10, 2017.
- R. Deriche participated in the PhD jury of M. Pizzolato at Université Côte d'Azur, Mars 31, 2017.
- M. Clerc chaired the PhD jury of Thomas Demarcy at Université Côte d'Azur in June 2017.
- M. Clerc participated as a reviewer in the PhD jury of Sara Sommariva at University of Genova, Italy, in February 2017.
- M. Clerc participated as a reviewer in the PhD jury of Emmanuelle Kristensen at Université Grenoble Alpes, in June 2017.
- M. Clerc participated as a reviewer in the PhD jury of Etienne Combrisson at Université de Lyon, in December 2017.
- M. Clerc participated in the PhD jury of Sara Rebagliati at University of Genova, Italy, in February 2017.
- M. Clerc participated in the PhD jury of L. Perronnet, at Rennes 1 University in September 2017.
- M. Clerc participated in the PhD jury of K. Dang, at Université Côte d'Azur in June 2017.
- M. Clerc participated in the PhD jury of C. Papageorgakis at Université Côte d'Azur in December 2017.
- M. Clerc participated in a BIM Masters 1 jury at Université Côte d'Azur.

- T. Papadopoulo participated in the PhD jury of B. Belaoucha at Université Côte d'Azur, May 29, 2017.
- T. Papadopoulo participated in a BIM Masters 1 jury at Université Côte d'Azur.
- D. Wassermann participated in the PhD jury of V. D. Nguyen, Paris Sud University, February 24, 2017

10.3. Popularization

- The P300 speller enjoyed a large publicity: on French TV *Le Magazine de la Santé* of France 5 in January 2017. It was featured in a newspaper article in La dépêche du midi in February 2017.
- M. Clerc gave interviews for Le Temps (Switzerland), Science et Vie Magazine on the topic of Brain-Computer Interfaces.

BIOCORE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

O. Bernard is the Chair of the next CAB conference (CAB 2019 in Brazil).

10.1.1.2. Member of the Organizing Committees

J.-L. Gouzé is a member of the scientific committee of several summer schools.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

O. Bernard is in the technical committee of the Computer Applied to Biotechnology (CAB) conferences, of the FOSBE conference (Foundations of Systems Biology in Engineering) and of the Algae Europe conference.

M. Chaves is a member of the program committee of JOBIM 2018 (Marseille).

J.-L. Gouzé is a member of the program committee for the conference POSTA (Italy, China).

10.1.2.2. Reviewer

All BIOCORE members have been reviewers for the major 2017 conferences in our field: CDC, ECC, IFAC World Congress,...

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

V. Baldazzi has been editor of the volume 1182 of Acta Horticulturae on the 'Proceedings of the V International Symposium on Models for Plant Growth, Environment Control and Farming Management in Protected Cultivation (Hortimodel2016)'.

M. Chaves is an Associated Editor of SIAM Journal on Applied Dynamical Systems (SIADS), since January 2015

10.1.3.2. Reviewer - Reviewing Activities

All BIOCORE members have been reviewers for the major journals in our field: Automatica, IEEE Transactions on Automatic Control, Journal of Mathematical Biology, Mathematical Biosciences, New Phytologist,...

10.1.4. Invited Talks

O. Bernard was invited to give a conference on microalgae at Ecole Centrale de Paris ("Biotechnological challenge") 'Use of microorganisms for biofuel production" (January, 16th, 2017).

O. Bernard was invited to do a presentation at the AlgaEurope conference 2017 (December, 5th - 7th, Berlin, D) "'Potential of evolution engineering for enhancing productivity of microalgae"'.

O. Bernard was invited for an oral presentation at the 1st IWA Conference on Algal Technologies for Wastewater Treatment and Resource Recovery conference 2017 (Delft, 16th - 17th, Delft, NL) "The role played by predators in a high rate algal pond for wastewater treatment".

M. Chaves was an invited speaker at the Workshop on Molecular Logic, Universidade de Aveiro, Portugal (June 2017).

S. Touzeau was invited to give a talk at the MADEV 17 "Mathématiques Appliquées à des questions de DEVeloppement" International Conference, organised by the French "Académie des Sciences" and the Moroccan "Académie Hassan II des Sciences et Techniques", Rabat, Morocco (October 2017).

10.1.5. Scientific Expertise

O. Bernard is a member of the scientific committee of the companies Inalve and BioEnTech.

J.-L. Gouzé was in several evaluation committees or juries: FWO, NWO, FNRS...

10.1.6. Research Administration

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.

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. She is also member of the CLHSCT (local committee for the safety of working conditions)

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 in the scientific committee of Académie 4 of UCA-Jedi. He is a member of the board of the SFBT (French Speaking Society for Theoretical Biology).

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. Since 2015, F. Grognard is a member of the MBIA CSS (Specialised Scientific Commission), in charge of the research scientists evaluation at INRA. He is a member of the steering committee of Academy 3, Space, Environment, Risk & Resilience of UCA-JEDI.

L. Mailleret is the head of the M2P2 team (Models and Methods for Plant Protection) of ISA. He's in the scientific council of Institut Sophia Agrobiotech.

S. Touzeau is a member of the steering committee of the metaprogramme SMaCH *Sustainable Management of Crop Health*, INRA (since 2016).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: F. Grognard (45.5h ETD) and L. Mailleret (26h ETD), "Equations différentielles ordinaires et systèmes dynamiques", L3, 1st year Engineering in Modeling and Applied Mathematics, Polytech'Nice, Université of Nice Sophia Antipolis, France.

Licence: N. Bajeux (192h ETD) is ATER at IUT Nice Côte d'Azur of Université of Nice Sophia Antipolis, France. ing in Modeling and Applied Mathematics, Polytech'Nice, Université of Nice Sophia Antipolis, France.

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 CentraleSupelec, France.

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) "Modeling biological networks by ordinary differential equations", 4th year students, Génie Biologie, Polytech'Nice, University of Nice - Sophia Antipolis.

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: S. Touzeau, "Analyse de données", 36.75 ETD, M1 (2nd engineering year in Génie Biologie), Polytech'Nice – Université Nice Sophia Antipolis, France.

O. Bernard together with M. Morales supervised a project involving 6 students of Ecole Nationale Supérieure des Mines de Paris (last year of engineering school, 1 week ("Combining photovoltaic panels and microalgae"). O. Bernard supervised a project involving 6 students from the Ecole Centrale de Paris (first year of engineering school), 4 months, to design a system for detecting contamination in microalgae cultures.

10.2.2. Supervision

PhD : D. Demory, "Impact of temperature on phytoplankton-virus interactions ", January, 17th, 2017, UPMC. Supervisors: A. Sciandra, S. Rabouille and O. Bernard.

PhD : S. Casagranda. "Modeling, analysis and reduction of biological systems",June 30, Université Côte d'Azur. Supervisors: J.-L. Gouzé and D. Ropers (Inria IBIS).

PhD : N. Bajeux. "Modélisation de stratégies d'introduction de populations, effets Allee et stochasticité", July 7, Université Côte d'Azur. Supervisors: O. Bernard, F. Grognard, and L. Mailleret.

PhD in progress : S. Almeida. "Theoretical design of synthetic biological oscillators and their coupling", since October 2014, Université Côte d'Azur. 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 Sophia Antipolis. Supervisors: E. Vercken (UMR ISA), L. Mailleret and L. Roques (UR BioSP).

PhD in progress : C. Lopez-Zazueta. "Use of Perturbation Theory to optimize metabolic production of biofuels by microalgae.", since January 2016, Université Côte d'Azur, supervisors O. Bernard and J.-L. Gouzé.

PhD in progress : C. Martinez von Dossow . "Modélisation et optimisation de consortia microalgues-bactéries", since February 2016, UPMC. Supervisors: O. Bernard, F. Mairet and A. Sciandra.

PhD in progress : L. Chambon. "Control of models of genetic regulatory networks". since October 2016, Université Côte d'Azur. Supervisor J.-L. Gouzé.

PhD in progress : L. Gomes Pereira. "Experimental and computational approaches to understanding the molecular origins of drug response heterogeneity, underlying resistance to cancer therapies", since October 2016, Université Côte d'Azur. Supervisors: M. Chaves and J. Roux (IRCAN, Nice).

PhD in progress: S. Nilusmas, "Gestion durable des nématodes à galles en cultures maraîchères : modélisation et optimisation du déploiement des résistances et des pratiques agronomiques", Université Côte d'Azur, since December 2016. Supervisors: S. Touzeau, C. Caporalino (ISA), V. Calcagno (ISA) and L. Mailleret.

PhD in progress: M. Gachelin, "Selection pressure to improve lipid productivity of microalgae", since March 2017, UPMC. Supervisors: O. Bernard and A. Sciandra.

PhD in progress : E. Firippi. "Mathematical analysis, control design and coupling for models of biological oscillators", since October 2017, Université Côte d'Azur. Supervisors: M. Chaves.

PhD in progress: I. Tankam Chedjou, "Modeling, analysis and control of plantain plant-parasitic nematodes", University of Yaoundé 1, since December 2015. Supervisors: J.-J. Tewa, F. Grognard, L. Mailleret, S. Touzeau.

PhD in progress: Y. Fotso Fotso, "Modeling, analysis and control of coffee berry borers", University of Dschang, since January 2017. Supervisors: S. Bowong, B. Tsanou, F. Grognard, L. Mailleret, S. Touzeau.

Master theses and engineering internships supervision

Engineer: Bruno Assis Pessi, "Modélisation de la croissance de microalgues en raceways sous serre ", Ecole CentraleSupelec.

Engineer: Selma Benzekri. "Recherche de matériaux biomimétiques des acarodomatia pour la lutte biologique basée sur les phytoseïdes", 2nd year Agroparistech, supervisors L. Mailleret, C. Bresch, P. Parolin and M. Ferrero.

Engineer: Olivier Fauré. "Augmentative Biological Control - optimizing natural enemies deployment", 2nd year engineering Polytech'Nice, Université Côte d'Azur, supervisors L. Mailleret and F. Grognard.

Engineer: Julien Guégan. "Évolution des traits d'histoires de vie de champignons phytopathogènes", 2nd year engineering Polytech'Nice, Université Côte d'Azur, supervisors F. Grognard and L. Mailleret.

M2: Laurent Dragoni, "Personnalisation de modèles numériques de médicaments", Université Côte d'Azur, supervisors J.-L. Gouzé and F. Dayan (Exactcure).

M2: Eleni Firippi. "Analysis and Control of models of genetic regulatory networks", Université Côte d'Azur, supervisor M. Chaves.

M1: Meng Zhang, "Study of the interactions between microalgae and cyanobacteria", UPMC.

IUT: Elie Varengot. "Recherche de matériaux biomimétiques des acarodomatia pour la lutte biologique basée sur les phytoseïdes", IUT Aix Marseille Université, supervisors L. Mailleret, C. Bresch, P. Parolin and M. Ferrero.

10.2.3. Juries

O. Bernard was in the jury, while F. Grognard and L. Mailleret were invited members in the jury of the PhD of Nicolas Bajeux, "Modélisation de stratégies d'introduction de populations, effets Allee et stochasticité", Université Côte d'Azur, July 7.

O. Bernard was reviewer for the PhD thesis of L. Haustenne " Mathematical modeling of the genetic regulatory network controlling comptetence for natural transformation in Steptococcus thermophilus", Université Louvain-La-Neuve (Belgium). (24 march 2017)

O. Bernard was reviewer for the PhD thesis M. Budinich " Modélisation des réseaux métaboliques en interaction avec l'Environnement ", Nantes Université. (28 april 2017)

O. Bernard was reviewer for the PhD thesis of R. Schaap "UV radiation as a new tool to control microalgal bio-product yield and quality". Massey University (20 Oct. 2017).

O. Bernard was reviewer and J.-L. Gouzé was in the jury of the PhD thesis of N. Giordano "Microbial growth control in changing environments: theoretical and experimental study of resource allocation in *Escherichia coli*", Grenoble University. (23 march 2017)

J.-L. Gouzé was in the jury and S. Touzeau was an invited member in the jury of the PhD of Stefano Casagranda, "Modeling, analysis and reduction of biological systems", Université Côte d'Azur, June 30.

O. Bernard was reviewer for the HDR of S. Tebbani "Contribution à l'étude des systèmes non linéaires incertains : application à la commande de systèmes biotechnologiques ", University of Paris-Sud, November 7th, 2016.

M. Chaves was reviewer for the HDR of Elisabeth Remy "Modélisation logique pour l'analyse des réseaux de régulation biologiques", Univ. Aix-Marseille, April 24, 2017.

10.3. Popularization

The activities related to microalgae have generated many articles in national newspapers (Le Monde, Nice Matin, ,...), and broadcasts on national TV (France 3).

O. Bernard gave a popularization conference "Will we drive with fuels brought algae in 2030?" in the framework of the "science for all" cycle of conferences organized by the city of Biot. 30th of March, 2017.

P. Bernhard has been involved in popularization of applied mathematics with two highschool conferences: Lycée Alexandre Dumas, Cavaillon and Centre International de Valbonne, Valbonne-Sophia Antipolis, on January 10 and 11 respectively.

M. Chaves gave a "180s" presentation "A mathematical tool for determining the dynamics of biological modules interconnection", at Journées Scientifiques Inria, Sophia Antipolis (June 2017).

M. Chaves gave a presentation on circadian clocks at Café-in, for all Inria personnel, at Inria Sophia Antipolis (October 2017).

BIOVISION Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Workshop UCAGATE: Pour une Plateforme d'Intelligence Territoriale de la Recherche @UCA, organized by Pierre Kornprobst and Mylène Leitzelman (Mnemotix), on May 16 at Inria Sophia Antipolis - Méditerranée (Amphi Kahn).

10.1.1.2. Member of the Conference Program Committees

- Le MOnde des Mathématiques Industrielles (MOMI 2017). Dora Karvouniari, Biovision participated to the organizing committee. This is a two-day workshop on applied and industrial mathematics that took place on the 27th and 28th of February, 2017. It was supported by Inria and financed by the Société des Mathématiques Appliquées (SMAI), the Agence pour les Mathématiques en Interaction avec l'Entreprise et la Société (AMIES), and by the Maison de la Modélisation, de la Simulation et des Interactions of Université Côte d'Azur (MSI – UCA). In total, 13 invited speakers and 62 participants (researchers, PhDs, and engineers) attended MOMI 2017.
- Pierre Kornprobst was a Technical Program Committee (TPC) member for the 25th European Signal Processing Conference (EUSIPCO 2017).

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Pierre Kornprobst is associate editor for the Computer Vision and Image Understanding Journal (CVIU).

10.1.3. Invited Talks

- Bruno Cessac, "Handling spatio-temporal correlations in neuronal systems", in: LACONEU 2017 - Computational Neuroscience Summer School, Valparaiso, Chile, January 2017
- Bruno Cessac, Multi scale dynamics in retinal waves, in: Brain Dynamics on Multiple Scales - Paradigms, their Relations, and Integrated Approaches, Dresde, Germany, June 2017.
- Bruno Cessac, "Gibbs distribution: from neural network dynamics to spike train statistics estimation", in: Advanced theoretical approaches to collective network phenomena: Bernstein Conference Satellite Workshop, Goettingen, Germany, September 2017.
- Bruno Cessac, "Statistical analysis of retinal responses", in: Random Structures on the Brain, Leiden, Netherlands, December 2017.
- Bruno Cessac, "Multi scale dynamics in retinal waves", in: Winter School on Deterministic and Stochastic Models in Neuroscience, Toulouse, France, December 2017.
- Bruno Cessac, "Multi scale dynamics in retinal waves", in: 2nd Systems Biology meeting at Sorbonne University, Paris, France, December 2017.
- Josselin Gautier, "Mesure de la vision et application au diagnostique et dispositifs de Réalité Mixte pour les malvoyants", école Centrale Supélec de Rennes, November 2017.
- Dora Karvouniari, "Dynamics in retinal waves", Institut de la Vision (Paris, France), February 2017.
- Dora Karvouniari, "Dynamics in retinal waves", Institute of Neuroscience (ION, Newcastle, UK), July 2017.

10.1.4. Research Administration

- The PhD Seminars of Inria Sophia Antipolis - Méditerranée are organized and held by PhD candidates every two weeks and aim to share knowledge, and to promote collaborations, all in a friendly and interactive way. Dora Karvouniari, Selma Souihel and Evgenia Kartsaki as past and current members of the organizing committee have been involved in the scheduling, communication and diffusion. These tasks include calls for presentations, calendar planning and promotion of each seminar. Finally, they are also involved in the organization of the MOMI 2017 conference.

- Pierre Kornprobst is an elected member of the Academic Board of UCA (since Nov. 2015). The role of this council is to proceed with the appointment of selection committees and the recruitment of public servants. Also, it validates the global training offer of Nice area, is involved in the global policy of doctoral training, and awards research funding. The council meets one a month and each member also participate to the evaluation of research proposals submitted to UCA ^{JEDI} calls.

- Pierre Kornprobst leads the working group UCA ^{GATE} (since May 2016). UCA commissioned an internal task force called UCA ^{GATE} to set-up an innovative tool that will extract and exploit the richness of skills present in UCA. This tool should (i) foster the emergence of new synergies inside UCA, (ii) enable external visitors and industrial partners to find in UCA expertise they need, (iii) provide analytics to UCA to be used in reporting periods. His role is to animate this working group and guide the development of the software done by the company Mnemotix according to users needs (first prototype in January 2017).

- Pierre Kornprobst is a member of the Comité de Suivi Doctoral (since March 2017).

- Pierre Kornprobst has been appointed by Inria Direction representative of the administration in the advisory committee of Inria contractual doctoral candidates[0] (on July 2016, for two years).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence :

- Dora Karvouniari, "Transmissions numériques", 1ere année de l'IUT, Département Réseaux et Télécommunications, 64h/year, 50 students.

- Selma Souihel "Advanced network administration and security: architecture of a company network, services installation and configuration, users management, system and network security, cryptography, virtual private networks and secured protocols, and supervision tools", 1ere année de l'IUT, Département Réseaux et Télécommunications, 64h/year, 50 students.

- Bruno Cessac and Dora Karvouniari: "A mathematical approach to retinal waves", January 2017, LACONEU Summer school [34].

10.2.2. Supervision

- PhD in progress: Theodora Karvouniari, "Retinal waves in the retina: theory and experiments". Started in October 2014. Defense scheduled in March 2018. Supervisor, B. Cessac.

- PhD in progress: Selma Souihel, "Generic and specific computational principles for the visual anticipation of motion trajectories". Started in November 2016. Supervisor B. Cessac

- PhD in progress: Evgenia Kartsaki. "How Specific Classes of Retinal Cells Contribute to Vision: a Computational Model", Started in October 2017. Supervisor B. Cessac codirection with E. Sernagor, ION.

10.2.3. Juries

- Bruno Cessac was reviewer of the thesis of Gregor Chliamovitch, University of Geneva, January 2017

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[0]Représentant de l'administration suppléant au sein de la Commission consultative des doctorants contractuels d'Inria

- Bruno Cessac was reviewer of the thesis of Christophe Gardella, University Pierre et Marie Curie, Paris, September 2017
- Pierre Kornprobst chaired the PhD jury of Effrosyni Doutsi, Université Côte d'Azur, March 2017.

10.3. Popularization

- Dora Karvouniari participated in "Maths C2+" at Inria week 19-23 June 2017. Maths C2+ hosts schoolboys and schoolgirls in a research environment. The goal is to allow young people to imagine the scientific future.
- Selma Souihel participated to the "fête de la science" as part of the scientific animation commission "MASTIC". She was in charge of vulgarizing her PhD research subject in order to make it intelligible by a public of young scholars, and their parents. She also took part in a pedagogical robot training "Poppy Ergo", aimed at introducing robotics and sequential programming to students in primary school.

<div align="center" style="color:red">**CAMIN Team**</div>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

David Guiraud was member of the organizing committee of IEEE NER 2017 Shangai

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Christine Azevedo was member of the JNRR (french journeys of research in robotics) program committee.

David Andreu was member of the European Congress on Embedded Real Time Software and Systems (ERTS2) program committee

Daniel Simon was member of the ICINCO (Int. Conf. on Informatics in Control, Automation and Robotics) program committee

David Guiraud was Associate editor of Theme 6 at IEEE EMBC

9.1.2.2. Reviewer

David Andreu was reviewer for ERTS2 2018.

Daniel Simon was reviewer for the ICINCO, IFAC and ECC conferences.

Christine Azevedo was reviewer for several journals and conferences this year.

David Guiraud was reviewer for IEEE EMBC and IEEE NER

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Christine Azevedo was guest editor for EJTM journal and Artificial Organs (2 special issues).

David Guiraud is associate editor for MBEC and JNE

9.1.3.2. Reviewer - Reviewing Activities

Daniel Simon was reviewer for Real-Time Systems.

David Guiraus was reviewer for JNE J. of Neuroscience Methods, MBEC and EJTM

9.1.4. Invited Talks

Christine Azevedo was invited to give a lecture in January 5th at Institut de la Moelle in Paris in the context of a meeting of the consortium ANR ECOTECH dedicated to Parkinson Posture.

Christine Azevedo and David Guiraud were invited to give 2 lectures in March on hand function rehabilitation during the symposium organized at CHUV hospital in Lausanne "Rehabilitation de la main : de l'amputation à la lésion centrale. Peut-on rêver à de nouvelles solutions technologiques ?".

Christine Azevedo was invited to give a lecture on FES during the workshop organized by BIONESS company at the SOFMER congress.

David Guiraud was invited for a plenary talk in Nagoya, Japan for the International Funciotnal Reconstruction of the Hand Symposium (28-29 of April)

9.1.5. Leadership within the Scientific Community

David Guiraud was member of « Gourpe de Travail Neurostimulation alliance Aviesan »

9.1.6. Scientific Expertise

David Guiraud was expert for the ERC Advanced Grant
David Guiraud was expert for ANR

9.1.7. Research Administration

Christine Azevedo was in charge of one working group to write a scientific challenge on handicap for Inria Strategic Plan.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : François Bonnetblanc, Movement Physiology and Electrophysiology, 6h ETD, Movement Physiology and Electrophysiology, 6h ETD, L3 DU Functional Electrical Stimulation, University of Montpellier, France

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

Master : D. Simon, Basics in feedback control, 6.5 h, M2 STIC, University of Montpellier, France;

Master : François Bonnetblanc, Motor Control applied to Neuroprosthesis, 6h ETD, M2 STAPS, University of Montpellier, France

Master : François Bonnetblanc, Neurophysiology of movement et Neuroprosthesis, 6h ETD, M2 Mechanics and Interactions, Polytech, University of Montpellier, France

Master : K. Godary-Dejean, real time OS, embedded and industrial networks, formal validation, dependability, 200h, master and engineers degrees, Polytech Montpellier, France;

Master : D. Guiraud, muscle modeling and FES basics, , SMH master2,

9.2.2. Supervision

PhD defended on november 7, 2017:Marion Vincent, Measuring the electrophysiological effect of direct electrical stimulation during awake brain surgery, 01/12/2013, François Bonnetblanc, David Guiraud and Hugues Duffau

PhD defended on november 17, 2017: Mélissa Dali, Modèles de génération et de propagation de potentiel d'action neuronale en condition de stimulation sélective multipolaire, since october 2014, David Guiraud and Olivier Rossel.

PhD in progress : Antony Boyer, Neuroplasticity and recovery in remote (sub)cortical structures following wide-awake surgery of infiltrative low-grade gliomas: investigation of fMRI and EEG signals, 01/09/2016, François Bonnetblanc and Sofiane Ramdani.

PhD in progress : Maxence Blond, Commande et modélisation d'un véhicule sous-marin, 18/01/2016, Daniel Simon, Vincent Creuze (LIRMM) and Ahmed Chemori (LIRMM).

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

PhD in progress : Benoît Sijobert, Stimulation électro-fonctionnelle pour l'assistance aux mouvements des membres inférieurs dans les situations de déficiences sensori-motrices, Since Dec. 2015, Christine Azevedo Coste and D. Andreu.

PhD in progress: Victor Vagne, "Couplage de la Spectroscopie en proche infrarouge et de la stimulation Transcrânienne (NIRS-tDCS) à courant continu dans l'Evaluation diagnostique de l'ischémie cérébrale lors d'un AVC", Oct. 2016, M. Hayashibe, D. Guiraud, Vincent Costalat (CHU Montpellier) and Emmanuelle Le Bars (CHU Montpellier)

PhD in progress: XinYue Lu, Respiratory detection and monitoring Since March 2017, C. Azevedo Coste, T Similowski (Groupe Hospitalier Pitié-Salpêtrière), S Renaux (NEURORESP)

9.2.3. Juries

Christine Azevedo participated in M Merad (UPMC, Paris) PhD thesis defense, December 1, 2017, as Reporter. The PhD was entitled "Investigations on upper limb prosthesis control with an active elbow."

Christine Azevedo participated in A Kubicki (Université de Bourgogne / UFR Staps, Dijon), HDR thesis defense, July 7th, 2017, as Reporter. The HDR was entitled "Comprendre la fragilisation du contrôle moteur prédictif pour optimiser la rééducation gériatrique."

Karen Godary-Dejean participated in M. Senoussi (IRIT, Université de Toulouse) PhD thesis defense, July 12, 2017, as examiner. The PhD was entitled "Etude et prototypage d'une nouvelle méthode d'accès aléatoire multi-canal multi-saut pour les réseaux locaux sans fils".

Karen Godary-Dejean participated in P. Delarboulas (ETIS, Université de Cergy Pontoise) PhD thesis defense, December 20, 2017, as examiner. The PhD was entitled "Navigation bio-inspirée pour un robot mobile autonome dans de grands environnements intérieurs".

Christine Azevedo participated in F Feuvrier Université de Montpellier, Faculté de Médecine Montpellier-Nîmes) Medicine thesis defense, December 20, 2017. The thesis was entitled " Evaluation des qualités métrologiques d 'une centrale inertielle par rapport à un système optique de capture du mouvement chez des patients avec foot-drop post AVC ."

David Guiraud was president of the PhD defense of Melissa Sourioux, Université de Bordeaux, 15/12/2017 « Etudes des mécanismes de coordination des activités rythmiques locomotrices et sympathiques au sein d'un réseau spinal activé par l'acethylcholine chez le rat nouveau-né »

David Guiraud was reviewer of the HDR of Nicolas Lonjon, 18/12/2017 " La pathologie vertébro-médullaire : Innovation en chirurgie rachidienne pour améliorer la qualité de vie des patients Mécanismes physiopathologiques des lésions médullaires et stratégie de réparation "

David Guiraud was examiner of the PhD defense Vincent Carriou 4/10/2017 "Multiscale, multiphysic modeling of the skeletal muscle during isometric contraction »

David Guiraud was examiner of the PhD defense Kai Dang 13/06/2017 "Electrical conduction models for cochlear implant stimulation"

David Andreu participated in V. Monthé PhD thesis defense (Lab-STIC, Brest University), December 1, 2017, as Reporter. The PhD was entitled « Développement des systèmes logiciels par transformation de modèles : Application aux systèmes robotiques ».

9.3. Popularization

CAMIN participed into Fête de la Science at LIRMM with 2 demos (cycling, EMG robotics hand control).

David Andreu presented the job of researcher in secondary school Collège Vincent Badie (Montarnaud)

Christine Azevedo organized Initiation sessions to informatics using Thymio robot at Collège Léon Cordas (Montpellier) in 3 classes (one 5e and two 6e). 3 sessions of 1h30 per class were organized followed by a half day visit at LIRMM robotics hall. One day session was also organized with École primaire Valfalis (Montbazin) in CE2 level.

CASTOR Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Conference Program Committees

Jacques Blum is member of the scientific commmittee of PICOF 18 (Inverse Problem, Control and Shape Optimization) which will take place in Beirut in 2018.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- C. Boulbe is layout editor of the free journal SMAI-Journal of Computational Mathematics.
- J. Blum is member of
    – the editorial board of the Journal of Scientific Computing (JSC),
    – the scientific committee of the collection "Mathématiques et Statistiques" of the ISTE publications,
    – editor in chief of the ISTE Open Science journal: "Mathématiques appliquées et stochastiques".

9.1.2.2. Reviewer - Reviewing Activities

- Hervé Guillard have been reviewer fo the Journal of Computational physics, Computers and Fluids and Internationa l Journal for Numerical methods in Fluids.
- R. Pasquetti has been reviewer for several journals, including the journal of Computational Physics and Computers and Fluids.

9.1.3. Invited Talks

- Hervé Guillard, "Fast waves and incompressible models", School of Aerospace, Mechanical and Mechatronic Engine ering The University of Sydney, NSW 2006
- Hervé Guillard, "Fast waves and incompressible models", Plasma Theory and Modelling, Centre for Plasmas and Fluids, Research School of Physics and Engineering, Australian National University, Canberra ACT 0200, AUS TRALIA
- Hervé Guillard, Workshop "Schémas numériques pour les écoulements à faible nombre de Mach", November 20-22 2017
- R. Pasquetti, Spectral element schemes for the Korteweg-de Vries and Saint-Venant equations, Rencontres Mathématiques - Mécanique du CFM 2017, Lille, August 28 - September 1, 2017

9.1.4. Leadership within the Scientific Community

- J. Blum is:
    – a member of the scientific committee of Academy 1 of UCA-IDEX JEDI: «Networks, Information and Digital society»,
    – member of the "bureau" and the director committee of the Fédération FR-FCM (Fédération de Recherche Fusion par Confinement Magnétique - ITER).
- H. Guillard is coordinator of the topic "Turbulence and transport of edge plasma" within the Fédération FR-FCM

- C. Boulbe is task coordinator of the ACT2: Free boundary equilibrium and Control within the Eurofusion WPCD workpackage.
- Responsabilities of Boniface Nkonga
    - Treasure of ECCOMAS, member of the Managing Board : 2017-2021. ECCOMAS : European Community on Computational Methods in Applied Sciences.
    - Scientific committee of EoCoe : 2016-2020.
    - Manager of the ITER contract IO/17/CT/4300001505 : 2017-2019.
    - Manager of the ITER contract IO/15/PR/11410/MCI: 2015-2017.
    - Manager of the Enabling research contract CfP-WP15-ENR-01/IPP-05 : 2014-2018
- Didier Auroux is president of the "Computer Science, Algorithms and Mathematics" committee of GENCI (HPC and numerical simulations)

9.2. Teaching - Supervision - Juries

9.2.1. 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, M2, Polytech Nice Sophia, Université de Nice Sophia Antipolis, France

Ecole d'ingenieur: D. Auroux, Projet, 35h, L3, Polytech Nice Sophia Antipolis, France

Master: J. Blum, Optimisation, 36h, M1, 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 numériques - EDP, 66h, M1, Polytech Nice Sophia Antipolis, France

Ecole d'ingenieur: C. Boulbe, Projet, 35h, L3, Polytech Nice Sophia Antipolis, France

Licence: S. Minjeaud, module Eléments de calcul différentiel, 18 h, L3, Université de Nice Sophia Antipolis, France.

Master: S. Minjeaud, module Méthodes numériques en EDP, 36 h, M1, Université de Nice Sophia Antipolis, France.

Master: S. Minjeaud, module Analyse et simulations numériques pour les EDP, 20 h, M2, Université de Nice Sophia Antipolis, France.

Master: S. Minjeaud, module Simulations numériques des problèmes d'évolution, 20 h, M2, 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, Eléments finis mixtes, 24h, M2, Polytech Nice Sophia, France

Licence: A. Sangam, Analyse, 40h, 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, Analyse Numérique, 68h, L3, Université de Nice Sophia Antipolis, France

Master: A. Sangam, Introduction to Finite Elements, 25h, M1, Université Nice Sophia Antipolis, France

9.2.2. Supervision

PhD : Estibals, Elise,MHD modeling and numerical simulation with finite volume-type methods. Application to fusion plasma, Université Côte d'Azur, 2017 May 2nd, PhD Supervisors : Hervé Guillard, Afeintou Sangam. [6]

PhD in progress : X. Song, "Model based control oriented scenario construction in Tokamak", since October 2016, Blaise Faugeras, Holger Heumann.

PhD in progress : J. Llobell, "Schémas numériques sur grilles décalées pour la dynamique des gaz", since October 2015, T. Goudon, S. Minjeaud.

9.2.3. Juries

Boniface Nkonga

- Phd Reports and Jury: E. Itam, Univ de Montpellier, H. Gidey, Univ. of Pretoria (Sud Africa).
- Jury HDR, Jacek Narski, Univ. de Toulouse, 2017.

COFFEE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

We do not keep track of such activities.

9.1.1.2. Member of the Organizing Committees

- Co-organisation of the conference FVCA8 june 2017 in Lille

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

We do not keep track of such activities.

9.1.2.2. Member of the Conference Program Committees

We do not keep track of such activities.

9.1.2.3. Reviewer

We do not keep track of such activities.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

T. Goudon if founding editor and co-Editor in chief of SMAI-J. Computational Mathematics

9.1.3.2. Reviewer - Reviewing Activities

We do not keep track of such activities.

9.1.4. Invited Talks

We do not keep track of such activities.

9.1.5. Leadership within the Scientific Community

We do not keep track of such activities.

9.1.6. Scientific Expertise

Thierry Goudon is member of the scientific board of CIRM and of FSMP.

9.1.7. Research Administration

Roland Masson is the head of the team PDE and Numerical Analysis of the laboratory J.A. Dieudonné.

Roland Masson is a member of the scientific committee of CERFACS.

Roland Masson is scientific advisor at the scientific direction of Total.

Thierry Goudon is member of the Evaluation Committee of Inria.

Thierry Goudon is Scientific Officer at the French Ministry of Education and Research.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Members of the team are faculties of University Nice Sophia Antipolis and they teach in all degrees of the University.

Florent Berthelin, Master 2 Agrégation, Université Nice Sophia Antipolis.

Florent Berthelin, Chair of the Master 2 Agrégation, Université Nice Sophia Antipolis.

Thierry Goudon is President of the national competition to hire teachers (agregation de mathematiques).

Stella Krell, Linear Algebra, Master 1 enseignement, ESPE Nice, 23h.

Stella Krell, Didactics of mathematics, Master 1 EEF, Université Nice Sophia Antipolis, 43h.

Stella Krell, Theses and placement supervision, Master 2 EEF, Université Nice Sophia Antipolis, 12h.

Stella Krell, Preparation to mathematics agrégation interne, Université Nice Sophia Antipolis, 18h.

Stella Krell, Intervention, Master 2 enseignement, Université Nice Sophia Antipolis, 3h.

Laurent Monasse, Introduction to analysis and dynamical systems, Ecole des Ponts ParisTech, 20h.

Thierry Goudon is President of the jury of agregation.

9.2.2. Supervision

PhD: Julian Hennicker, Hybrid dimensional modeling of multi-phase Darcy flows in fractured porous media, Univ Nice - Sophia Antipolis, 10 July 2017, Roland Masson and Konstantin Brenner

PhD: Thi Huong Le, On some periodic solutions of discrete vibro-impact systems with a unilateral contact condition, Univ Nice - Sophia Antipolis, 16 June 2017, Stéphane Junca

PhD in progress: Kevin Atsou, Mathematical modeling of tumor growth, analysis and simulation, 01 October 2017, Thierry Goudon

PhD in progress: Laurence Beaude, Discretization of high energy geothermal systems in faulted porous media, 01 October 2015, Roland Masson, Konstantin Brenner, Simon Lopez and Farid Smai

PhD in progress: Billel Guelmame, Conservation laws in mechanics, 01 October 2017, Stéphane Junca

PhD in progress: Giulia Lissonni, DDFV methods and domain decomposition: applications in fluid mechanics, 01 September 2016, Stella Krell and Thierry Goudon.

PhD in progress: Julie Llobell, Numerical schemes on staggered grids for conservation laws, 01 September 2015, Thierry Goudon and Sebastian Minjeaud

PhD in progress: Leo Vivion, Dynamical model of a Lorentz gas : kinetic approach, analysis and asymptotic issues, 01 September 2017, Thierry Goudon

PhD in progress: Frédéric Marazzato, Modeling of fracture and fragmentation using a Discrete Element method, 01 October 2016, Alexandre Ern, Karam Sab and Laurent Monasse.

9.2.3. Juries

- Laurent Monasse, Examiner, PhD defense Julien Ridoux, Université Paris 6, 4 October 2017.

- Thierry Goudon, Pdt HDR defese F. Laurent-Nègre, "Méthodes de moments pour la description de sprays et d'aérosols : modélisations et simulations num'eriques", ECParis, Mars 2017.

- Thierry Goudon, referee PhD defense T. Blanc, "Étude mathématique des problèmes paraboliques fortement anisotropes", Marseille, Déc. 2017.

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LEMON Team

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8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

Carole DELENNE was member of the local organisation committee of the "Powders and Grains" congress that hold in Montpellier (Corum) in July 2017

Gwladys TOULEMONDE is chair of the organizing committee of the international conference METMA IX (June 2018, Montpellier).

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

Antoine ROUSSEAU is member of DCDS-S editorial board

8.1.2.2. Reviewer - Reviewing Activities

Carole DELENNE is reviewer Journal of Hydraulic Research, Water (2 manuscripts/year)

Vincent GUINOT is reviewer for Journal of Hydrology, Advances in Water Resources, Mathematical Problems in Engineering (3 manuscripts/year)

Antoine ROUSSEAU is reviewer for Journal of Hydrology (2 manuscripts/year)

8.1.3. Invited Talks

Antoine ROUSSEAU gave an invited talk to the Sino-French Conference on Computational and Applied Mathematics

8.1.4. Leadership within the Scientific Community

Antoine ROUSSEAU is the scientific coordinator of the the research line *advanced modeling for marine energy* at MERIC (Santiago, Chile).

8.1.5. Scientific Expertise

Antoine ROUSSEAU is member of the scientific board of Fondation Blaise Pascal

Carole DELENNE was reviewer for the STIC-AmSud Program

Gwladys TOULEMONDE is appointed by the Occitanie region to the scientific board in charge of innovation projects in the field of intelligent systems and digital data chain

8.1.6. Research Administration

Vincent GUINOT is head of the ETH team at HSM (10 staff members),

Vincent GUINOT is member of the HSM steering board,

Antoine ROUSSEAU is head of the LEMON team at Inria CRI-SAM (5 staff members),

Antoine ROUSSEAU is member of the Inria CRI-SAM steering board (*Comité des Projets*)

Gwladys TOULEMONDE is elected to the MIPS Scientific Department (Mathematics, Computer Science, Physics and Systems), a component of the University of Montpellier

Gwladys TOULEMONDE is elected to IMAG laboratory board

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

License : C. Delenne, Méthodes mathématiques pour l'ingénieur, 10.5H CM, 22.5hTD, L3, Polytech Montpellier

License : C. Delenne, Hydraulique à surface libre, 15h CM, 15hTD, L3 (apprentissage), Polytech Montpellier

License : C. Delenne, Hydraulique, 28hTD, L1, IUT Génie Civil, Nîmes

License : C. Delenne, Algorithme et programmation 3h CM, 21hTD 15h projet, Polytech Montpellier, Université de Montpellier.

License : C. Delenne, Projets Eau et Génie Civil, 24hTP, Polytech Montpellier (apprentissage), Université de Montpellier.

License : V. Guinot, Mécanique des fluides, 72h ETD, L3, Polytech Montpellier, Université de Montpellier.

License : V. Guinot, Hydraulique à surface libre, 60h ETD, L3, Polytech Montpellier, Université de Montpellier.

License : F. Marche, Biomaths, 72h TD., L1, Université Montpellier

License : G. Toulemonde, Harmonisation Maths, 18h TD, L3, Polytech Montpellier, Université de Montpellier.

License : G. Toulemonde, Tutorat Maths, 5h TD, L3, Polytech Montpellier, Université de Montpellier.

License : G. Toulemonde, Modélisation et statistique, 18h CM, L3, Polytech Montpellier, Université de Montpellier.

License : G. Toulemonde, Modélisation statistique et analyse de données, 30h CM-TD, M1, Polytech Montpellier, Université de Montpellier.

Master : G. Toulemonde, Econométrie, 12h CM, 16h TD, M2, Polytech Montpellier, Université de Montpellier.

Master : G. Toulemonde, Econométrie avancée, 3h CM, 3h TD, M2, Faculté de Sciences Economiques, Université de Montpellier.

Master : C. Delenne, Hydraulique, 30hTP, M1, Polytech Montpellier, Université de Montpellier.

Master : C. Delenne, Spécialité hydraulique, 18h TD, Polytech Montpellier, Université de Montpellier.

Master : C. Delenne, Tutorat de stages et projets, apprentis, 100hETD, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, Méthodes Mathématiques pour l'Ingénieur, 18h ETD, M1, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, Hydraulique des Réseaux, 30h ETD, M1, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, Mécanique des Fluides, Master SPAE, 36h ETD, M1, UMontpellier

Master : V. Guinot, Transitoires hydrauliques, 54 h ETD, M1, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, tutorat de stages ingénieur, 15h ETD, M1, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, Modélisation hydraulique à surface libre 2D, 6h ETD, M2, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, Projet Industriel de Fin d'Etudes (PIFE), 30h ETD, M2, Polytech Montpellier, Université de Montpellier.

Master : V. Guinot, Tutorat de Stage de fin d'études ingénieur, 18h ETD, M2, Polytech Montpellier, Université de Montpellier.

Master : F. Marche, Analyse numérique des EDP, 24H CM, 12H TD, 15H TP., M1, Université Montpellier

Master : F. Marche, Calcul scientifique avancé, 26H CM, M2R, Université Montpellier

8.2.2. Supervision

Gwladys TOULEMONDE is responsible of the students recruitment in the IG department Polytech Montpellier.

Gwladys TOULEMONDE co-supervises a PhD thesis in an established collaboration with Sanofi and is ponctually implicated in other industrial collaborations (BALEA, Twin Solutions)

Gwladys TOULEMONDE advises a post-doctoral fellow since october 2017 on spatio-temporal extreme processes to assess flood hazards (NUMEV funding)

8.2.3. Juries

Antoine ROUSSEAU was appointed external member of a recruitment campaign at IRSTEA (research engineer)

Antoine ROUSSEAU was appointed internal member of a recruitment campaign at Inria (HR jurist)

Antoine ROUSSEAU was appointed internal member of a recruitment campaign at Inria (CR2 at Inria CRI-SAM)

Carole DELENNE was appointed internal member of a recruitment campaign for a lecturer at University of Montpellier (LMGC/IUT Nîmes).

8.3. Popularization

Antoine ROUSSEAU gave several conferences for highschool students and their teachers, on the topics of mathematical modeling for environmental sciences:

Fête de la Science, Oct. 2017, Genopolys Montpellier (2 days)

Maths au lycée, Apr. 2017, Lycée de Castelnaudary (1 day)

Antoine ROUSSEAU is member of the national Inria network for scientific outreach *Médiation scientifique*

Antoine ROUSSEAU is member of the editorial board of Interstices

Antoine ROUSSEAU is member of the scientific board of Fondaton Blaise Pascal

Antoine ROUSSEAU co-authored the Calendrier Mathématique 2017

MATHNEURO Team

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific Events Organisation

6.1.1.1. Member of the Organizing Committees

Olivier Faugeras and Romain Veltz were on the Advisory Board of the 3rd International Conference on Mathematical Neuroscience, held in Boulder Colorado (USA), May 30 - June 2, 2017.

Mathieu Desroches organised a special session on "Dynamical Systems and Dysfunctions: modeling and neuronal dynamics' interpretation in both healthy and pathological brain states" at the C@UCA workhop (Fréjus, France), June 6-8, 2017.

Mathieu Desroches co-organised together with Daniele Avitabile (University of Nottingham, UK) and Vivien Kirk (University of Auckland, New Zealand) a two-part mini-symposium on "Recent Advances in Slow-Fast Dynamics" at the SIAM Conference on Applications of Dynamical Systems (Snowbird, Utah, USA), May 21-25, 2017.

Romain Veltz co-organised with Stéphane Barland (ILNL, Sophia Antipolis) the workshop Computational Neuroscience and Optical Dynamics held at the Institut Nonlinéaire de Nice (INLN, Sophia Antipolis), May 18-19, 2017.

6.1.2. Scientific Events Selection

6.1.2.1. Member of the Conference Program Committees

Pascal Chossat and Martin Krupa were on the Program Committee of the 3rd International Conference on Mathematical Neuroscience, held in Boulder Colorado (USA) May 30 - June 2 2017.

6.1.3. Journal

6.1.3.1. Member of the Editorial Boards

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

6.1.3.2. Reviewer - Reviewing Activities

Fabien Campillo acts as a reviewer for Journal of Mathematical Biology, for the conference TAMTAM 2017 *Tendances dans les Applications Mathématiques en Tunisie, Algérie et Maroc*.

Mathieu Desroches acts as a reviewer for Physica D, SIAM Journal on Applied Dynamical Systems (SIADS), PLoS Computational Biology, Dynamical Systems: An International Journal, IEEE Transactions on Cognitive and Developmental Systems, Discrete and Continuous Dynamical Systems Series B.

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).

Martin 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).

Martin Krupa has edited together with Pietro-Luciano Buono (University of Ontario, Canada) and Ian Stewart (University of Warwick, UK) a special issue of the Journal *Dynamical Systems: An International Journal* titled "Equivariance and Beyond: M. Golubitsky's 70th Birthday".

Romain Veltz acts as a reviewer for Neural Computation, Elife, SIADS, Journal of the Royal Society Interface.

6.1.4. Invited Talks

Pascal Chossat, "Latching dynamics in neural networks with synaptic depression", C@UCA workshop, Fréjus (France), June 2017.

Pascal Chossat, "Pourquoi le léopard est-il tacheté et le tigre rayé", Café des Sciences d'Avignon, Avignon (France), December 2017.

Pascal Chossat, "Heteroclinic chains as a model of sequential activation of concepts in neural networks", workshop Nice Nonlinearities, Nice (France), December 2017.

Mathieu Desroches, "Canards and spike-adding phenomena in neural bursters", University of Liverpool (UK), March 2017.

Mathieu Desroches, "Canards and spike-adding in neural bursters", University of The Balearic Islands (Palma, Spain), March 2017.

Mathieu Desroches, "Three-timescale dynamics: canards and spike-adding", SIAM Conference on Applications of Dynamical Systems, Snowbird (Utah, USA), May 2017.

Mathieu Desroches, "Slow-fast transitions to seizure states in the Wendling-Chauvel neural mass model", C@UCA workshop, Fréjus (France), June 2017.

Olivier Faugeras, "Describing the thermodynamic limit of networks of interacting neurons", workshop *PDE and Probability Methods for Interactions*, Inria Sophia Antipolis, April 2017.

Olivier Faugeras, "Multiscale representations in mathematical neuroscience: deterministic and stochastic approaches", C@UCA workshop, Fréjus (France), June 2017. [keynote lecture]

Olivier Faugeras, "Coping with correlations in the analysis of the thermodynamic limit of neuronal networks", HBP workshop *Theoretical Neuroscience in the Human Brain Project* and at the workshop *New advances in theoretical tools for the study of large scale neural systems* at the CNS Conference, Antwerp, the Netherlands, July 2017.

Olivier Faugeras, "On a certain McKean-Vlasov equation that arises in Neuroscience", workshop on *Singular McKean-Vlasov equations*, Inria Sophia Antipolis, September 2017.

Elif Köksal Ersöz, "Synchronization of weakly coupled canard oscillators", mini-symposium on "Recent Advances in Slow-Fast Dynamics" at the SIAM Conference on Applications of Dynamical Systems (Snowbird, Utah, USA), May 21-25, 2017.

Elif Köksal Ersöz, "Canard mediated (de)synchronization in coupled phantom bursters", C@UCA workshop, Fréjus (France), June 2017.

Martin Krupa, "Modeling cortical spreading depression induced by the hyperactivity of interneurons", C@UCA workshop, Fréjus (France), June 2017. [joint talk with Massimo Mantegazza (IPMC, Sophia Antipolis)]

Romain Veltz, "Invariant manifolds in Mathematical Neurosciences", winter school *Deterministic and Stochastic Models in Neurosciences*, Toulouse (France), December 2017.

Romain Veltz, "On a toy network of neurons interacting through nonlinear dendritic compartments", workshop *Random Structures on the Brain*, Lorentz Center, Leiden (the Netherlands), December 2017.

Romain Veltz, "Oscillatory dynamics in a stochastic spiking neural network", workshop *Brain Dynamics and Statistics*, Banff (Canada), March 2017.

Romain Veltz, "Hopf bifurcation in the mean field of a stochastic spiking neural networks", European Institute in Theoretical Neuroscience, Paris (France), April 2017.

Romain Veltz, "Study of a mean field model stemming from a neural network", Gdr NonLocal, Toulouse (France), April 2017.

6.1.5. Scientific Expertise

Pascal Chossat was on the Advisory Board of the Complex Systems Academy of the UCA[JEDI] Idex.

Fabien Campillo reviewed a grant proposal for the Swiss National Science Foundation. He is also member of the *Comité NICE* of the Projects Committee of Inria Sophia Antipolis - Méditerranée.

Mathieu Desroches reviewed grant proposals for the Agence Nationale de la Recherche (ANR).

Olivier Faugeras regularly reviews proposals to the European Research Council (ERC) in Mathematics, Computer Science and NeuroScience and he is a member of the ERC Panel 1 (Mathematics). He also reviewed a proposal in Mathematics for the Netherlands Organisation for Scientific Research (NWO).

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

Chalk-learning

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

Master 1 BIM/UPMC: Mathieu Desroches, Modèles Mathématiques et Computationnels en Neuroscience, 30 hours, Paris, France.

In-service education, Supagro & Inra: Fabien Campillo (in collaboration with Céline Casenave from Inra), Modélisation et contrôle de systèmes dynamiques en agronomie, 20 hours, Montpellier, France.

6.2.2. Supervision

PhD in progress: Axel Dolcemascolo, "All optical neuromimetic devices", started in January 2016, co-supervised by Romain Veltz and Stéphane Barland (INLN).

PhD in progress: Pascal Helson, "Study of plasticity laws with stochastic processes", started in September 2016, co-supervised by Romain Veltz and Etienne Tanré (Inria TOSCA).

PhD in progress: Quentin Cormier, "Biological spiking neural networks", started in September 2017, co-managed ("co-encadré") by Romain Veltz and Etienne Tanré (Inria TOSCA).

MORPHEME Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Selection

8.1.1.1. Member of the Conference Program Committees

Laure Blanc-Féraud was a Associated Editor for the Workshop NCMIP 2017 New Computational method in Inverse Problems and the Conference IEEE ISBI 2018.

Eric Debreuve was a member of the Program Committee of ACIVS 2017 (Advanced Concepts for Intelligent Vision Systems).

8.1.1.2. Reviewer

Laure Blanc-Féraud was a reviewer for the conferences ISBI, GRETSI, NCMIP.

Eric Debreuve was a reviewer for the conferences IEEE International Symposium on Biomedical Imaging (ISBI) and IEEE International Conference on Image Processing (ICIP).

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

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

8.1.2. Journal

8.1.2.1. Member of the Editorial Boards

Laure Blanc-Féraud was Associated Editor for the journals SIAM Imaging Sciences and the Revue Traitement du Signal.

Xavier Descombes was Associated Editor for the journal Digital Signal Processing.

8.1.2.2. Reviewer - Reviewing Activities

Laure Blanc-Féraud was a reviewer for the journals ...

Eric Debreuve was a reviewer for the journals ...

Xavier Descombes was reviewer for the journals IEEE Signal Processing and IEEE TMI.

Grégoire Malandain was reviewer for the journals BMC Medical Imaging and International Journal of Computer Assisted Radiology and Surgery.

8.1.3. Invited Talks

Florence Besse was invited to DENA 2017 (Workshop on Expanding Networks Dynamics : Modeling, Analysis and Simulation of multi-scale spatial exploration under constraints), Nov 2017, Nice and to the Canceropole PACA annual meeting, June 2017, Saint-Raphaël.

Laure Blanc-Féraud was invited to the Workshop on Sparsity in Applied Mathematics and Statistics, Brussels Belgium, 1-2 June 2017.

8.1.4. Leadership within the Scientific Community

Florence Besse is a member of the scientific council of the IDEX JEDI Academy 2, and a member of the scientific council of the LabeX Signalife program.

Laure Blanc-Féraud is the directrice of the GdR 720 ISIS du CNRS: standard scientific animation (see website gdrisis.fr) and organization of the general meeting in november 2017 (100 participants over 3 days). She was also chair of the scientific council of Academy 1 of Idex UCA JEDI.

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 member of the Scientific Committee of the MIA department of INRA.

8.1.5. Scientific Expertise

Laure Blanc-Féraud was expert for the Italian Ministery of Research (MUIR) and for the FNRS (Belgium).

Eric Debreuve was an expert for a CIFRE PhD proposal.

Xavier Descombes is an expert for the DRRT (Paca, Ile de France, Bretagne) and for the ANR.

8.1.6. Research Administration

Laure Blanc-Féraud was member of the Academic Council of COMUE UCA and member of the scientific council of ITAV (Toulouse) and GdR MIV (Microscopie Fonctionnelle du Vivant).

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

Eric Debreuve is a member of the Comité Permanent des Ressources Humaines (CPRH), UNS, section 61.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

IUT: Agustina Razetti, principes des transmissions radio, 12h Eq. TD, IUT Nice Côte d'Azur, Université de Nice Sophia Antipolis, France.

IUT: Agustina Razetti, initiation Matlab, 6h Eq. TD, IUT Nice Côte d'Azur, Université de Nice Sophia Antipolis, France.

Licence: Arne Bechensteen, Outils pour la physique , 36h, L1, Polytech Nice Sophia , France.

Licence: Arne Bechensteen, Programmation impérative PeiP1 , 29.5h, L1, Polytech Nice Sophia, France.

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

Master: Laure Blanc-Féraud, management of the module Traitements numériques des images (24h), teaching 5h CM.

Master: Florence Besse, genetic tools for the study of neuronal networks, 4h, Université Côte d'Azur, France.

Master: Florence Besse, RNA localization and neuronal morphology, 4h, Université Côte d'Azur, France.

Licence: Caroline Medioni, Imagerie tissulaire, 15H, L3, Université Nice Côte d'Azur, France

Master: Caroline Medioni, Master "Sciences de la vie" jury , juin 2017

Master/Engineer: Eric Debreuve, Data Mining, 27.5h EqTD, Master 2/Engineer 5th year, UNS.

Master: Xavier Descombes, Traitement d'images, Analyse de données, Techniques avancées de traitement d'images, 10h Eq. TD, Niveau M2, ISAE, France.

Master: Xavier Descombes, Traitement d'images, master VIM, 12h Eq. TD, Niveau M2, Université Côte d'Azur, France.

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

Master: Xavier Descombes, Analyse d'images, master GBM, 9h Eq. TD, Niveau M2, Université Côte d'Azur, France.

8.2.2. Supervision

PhD: Lola Baustista, Reconstruction de phase pour la microscopie à Contraste Interférentiel Différentiel, Université Côte d'Azur, 30 june 2017.

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

PhD in progress: Emmanuelle Poulain, Fluoroscopy/CTA dynamic registration, 1st february 2016, Grégoire Malandain.

PhD in progress: Arne Bechensteen, TIRF-MA and super-resolution by sparse estimation method, 2 October 2017, Laure Blanc-Féraud, Gilles Aubert, Sébastien Schaub.

PhD in progress: Anca-Ioana Grapa, Characterization of the organization of the Extracellular Matrix (ECM) by Image Processing , 19 September 2016, Laure Blanc-Féraud, Xavier Descombes.

8.2.3. Internships

Arne Henrik Bechensteen: INSA Toulouse, Towards a continuous relaxation of the ℓ_0 constrained problem. Supervisors: L. Blanc-Féraud, G. Aubert.

Kévin Giulietti: M2 SVS, Université Nice Sophia Antipolis, Détection et caractérisation de réseaux mitochondriaux à partir d'images de microscopie. Supervisor: X. Descombes.

Nadège Guiglielmoni: M2 AMIB, université Paris Sud, Reconstruction 3D d'axones uniques et multiples et analyse quantitative des branches sur des données temporelles dans le cerveau de la drosophile. Supervisors: C. Medioni, G. Malandain.

Christelle Requena: M2 SVS, Université Nice Sophia Antipolis, Détections d'extensions membranaires impliquées dans les communications cellaulaires à partir d'images de microscopie in vivo. Supervisor: X. Descombes.

Sarah Laroui: M2 SVS-BIM, UNS, Automatic recognition of fungi phenotype by extraction and classification of morphometric parameters. Supervisors: E. Debreuve, X. Descombes.

8.2.4. Juries

Laure Blanc-Féraud participated to the PhD thesis committees of Lola Bautista (MORPHEME) as supervisor and of Simon Labouesse (Institut fresnel) as reviewer, and to the HDR jury of Aurelia Fraisse (L2S, Gif sur Yvette) as reviewer and of El-Hadi Djermoune (CRAN, Nancy).

Florence Besse participated to the PhD thesis committee of A. Samacoits (Pierre et Marie Curie univ.).

Xavier Descombes participated as reviewer to the PhD thesis committee of Vincent Briane (Rennes univ.) and Zhilin Li (CMLA Cachan).

Grégoire Malandain participated as reviewer to the PhD thesis committee of Hoai-Nam Nguyen (Rennes univ.).

8.3. Popularization

Anca Grapa, Kévin Giulietti and Gaël Michelin participated as exhibitors to the "Fête de la science 2017" manifestation in Juan-les-Pins (palais des congrès). The objective was to initiate non-scientic audience to the research issues in Morpheme team, and more generally to numerical science.

Laure Blanc-Féraud gave a talk for the PhD students association of the doctoral school STIC of Université Côte d'Azur "Voir l'intérieur d'une cellule vivante : lunettes numériques au secours du microscope" , mai 2017.

VIRTUAL PLANTS Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Journal

8.1.1.1. Member of the Editorial Boards

- C. Godin is a member of the Editorial Board of Frontiers in Plant Sciences.
- Since February 2017, Yann Guédon is an Associate Editor of Frontiers in Plant Science, section Technical Advances in Plant Science.
- Since March 2017, Christophe Pradal is Associate Editor of BMC Plant Methods.

8.1.1.2. Reviewer - Reviewing Activities

- C. Godin has been reviewing for several journals in plant sciences and modelling: PNAS, PLoS Computational Biology, Annals of Botany, Frontiers in Plant Science.
- Y. Guédon has been reviewing for several journals: Agricultural and Forest Meteorology, Annals of Botany, Frontiers in Plant Science and Statistics and Computing.
- F. Boudon has also been reviewing for several journals: International Journal of Computer Games Technology, Computer and GRaphics, Frontiers in Plant Science, Plant Methods, PLoS One, Presence, Annals of Botany, Biology Open, Developmental Dynamics.
- O. Ali has been reviewing papers submitted in Scientific Report and Development.
- C. Pradal has been reviewing papers submitted in SoftwareX and Frontiers in Plant Science.

8.1.2. Invited Talks

- C. Godin has been invited to give a talk at the Mathematics for Developmental Biology meeting, held at the BIRS Center for Mathematics in Banff, Canada.
- C. Pradal has been invited to give talks about Multiscale Plant Hydraulics in the kickoff meeting of the ANR-DFG Project FSPM Apple, about Modularity in FSPM in the national meeting of the INRA MFPC network, and about Reproducibility of computational experiments in high-throughtput phenotyping in the GDR MADICS at Paris-Saclay.

8.1.3. Leadership within the Scientific Community

8.1.3.1. Christophe Godin:

- is member of the Board of the Functional Structural Plant Models series of conferences.
- is co-coordinator with Patrick Lemaire of the 4th Research Axis on Imaging in Biology and Modeling of the Institute for Computational Biology (IBC) of Montpellier.

8.1.3.2. Yann Guédon:

- is a member of the committee board of the CIRAD/INRA/Montpellier SupAgro AGAP research unit and the scientific leadear of the Models and Methods for Plant Phenotyping (M2P2) team.
- is member of the ERCIM working group on Computational and Methodological Statistics.

8.1.3.3. Christophe Pradal:

- is a member of the INRA expert scientific commissions (CSS Ecophysiologie, ge ́ne ́tique et biologie inte ́grative des plantes) that assesses INRA individual researcher activities.
- is a member of the HCERES expert scientific commissions that assesses national research organisations.

8.1.3.4. ChristianFournier:

- is a member of the INRA engineer evaluation commission (CEIMe ´thodes Pour la Recherche : Biologie ve ´ge ´tale / Domaine Informatique, bio-informatique, statis- tiques et calcul scientifique) that assesses INRA individual engineer activities.

8.1.4. Scientific Expertise

- C. Godin is a member of the International Scientific Advisory Committee of the new Plant Pheno-typing and Imaging Research Centre (P2IRC), Saskatchewan, Canada.
- C. Godin is a member of the Review and Mentoring committee of James Lock's group in Sainsbury Lab, Cambridge, UK.

8.1.5. Research Administration

- C. Godin is a member of the project committee board at Sophia-antipolis Mediterranne ´e Reacher Center.
- C. Godin is 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 (IBC) in Montpellier.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master : C. Godin, Computer & Discrete Geometry & Graphics, 9h, (M1), université de Montpellier, Fr

Master : C. Godin, Introduction to Plant Modeling, 25h, (M2), université de Montpellier, Fr

Master : C. Godin, Mathematical Modelling of Phyllotaxis, 4h, (M2), université de Montpellier, Fr

Master : Y. Guédon , Stochastic processes, 16h, (M2) université de Montpellier, Fr

Master : F. Boudon, Computer Graphics, 18h, (M2) université de Montpellier, Fr

Master : C. Pradal, Curves & Surfaces, 4.5h, (M2) université de Montpellier, Fr

Master : P. Fernique, Stochastic processes, 16h, (M2) université de Montpellier, Fr

Doctorat : C. Godin, Animal & Vegetal Morphogenesis, 35h, ENS Paris, Fr

Doctorat : C. Godin, Modelling Plant Development, 6h, E ´cole de Physique des Houches, Fr

8.2.2. Supervision

PhD in progress : Anne Schneider, *"Modeling branching in Roses"*, Angers University, Jessica Bertheloo, C. Godin, F. Boudon.

PhD in progress : Hadrien Oliveri, *"Mechanical modeling of organ growth"*, Montpellier University, C. Godin, J traas and O. Ali.

PhD in progress : Jean-Louis Dinh, *"Coupling flux and growth models in plant development"*, Nottingham University, C. Hodgman, C. Godin.

PhD in progress : Jean-Philippe Bernard, *"Meshless methods for organ development"*, Montpellier University, C. Godin, B. Gilles.

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, Yann Guédon.

8.2.3. Juries

C. Godin was president of the CR-concours at Inria for the Sophia-Antipolis Me ´diterrane ´e center.

C. Godin was president of a Professor concours at ENS de Lyon.

C. Godin was the President of the Jury of Elise Laruelle's defence (AgroParitech).

8.3. Popularization

- C. Godin gave an invited 2 hours seminar to 4 classes of high-school students for the Math week (March) at the Lyce ´e International de Valbonne, France.
- C. Godin gave a couple of 2h classes at Lyce ´e Pompidou (Montpellier).
- C. Godin participated to the writing of a collective book reviewing the recent discoveries in Biology and dedicated to a wide audience including politicians and medias.
- O. Ali is a member of the Sam & You newsletter (the newsletter of the SAM Inria research center) writing committee.
- H. Oliveri took part in the Class'Code Initiative, a Mooc produced by Inria and OpenClassRoom provinding supports and guidelines for people wanting to teach computer science to young childrens.

<p align="center" style="color:red">COATI Project-Team</p>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Whole team

Journées JCALM (May 4-5, 2017) held in Sophia-Antipolis. Topic: Designs.

Christelle Caillouet, David Coudert

"Journées RESCOM 2017" of GDR RSD of CNRS, Sophia Antipolis, France, January 11-13, 2017.

Frédéric Havet

6th STINT meeting, Valgaudemar, France, July 5-7, 2017;

7th STINT meeting, Sophia Antipolis, France, December 4-6, 2017.

Frédéric Havet, Bruce Reed

2nd Cassidian Workshop, Cassis, France, May 14-20, 2017.

Frédéric Giroire, Joanna Moulierac

GreenDays@Sophia 2017: 8th French workshop on Network Energy efficiency, Université Côte d'Azur, Campus SophiaTech, Sophia Antipolis, June 26-27, 2017.

Bruce Reed

Co-Organizer 2017 Barbados Graph Theory Workshop, Holetown, Barbados, March 24-31, 2017.

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

David Coudert

Scientific Co-Chair of Track 7 "Cloud Computing and Data Center Management" of the 14th International Symposium on Pervasive Systems, Algorithms, and Networks (I-SPAN'17), Exeter, UK, June 21-23, 2017.

9.1.2.2. Member of the Conference Program Committees

David Coudert

AlgoTel'17: Rencontres Francophones sur les Aspects Algorithmiques de Télécommunications, Quiberon, France, May 30-June 2, 2017;

ONDM'17: International Conference on Optical Networking Design and Modeling, Budapest, Hungary, May 15-17, 2017;

IEEE ICC'17: IEEE International Conference on Communications, Paris, France, May 21-25, 2017;

IEEE Globecom'17: IEEE Global Communications Conference, Singapore, December 4-8, 2017.

Frédéric Havet

IX Latin and American Algorithms, Graphs and Optimization Symposium (LAGOS 2017), Marseille, France, September 11-15, 2017;

> 19th Journées Graphes et Algorithmes (JGA 2017), Bordeaux, France, November 15-17, 2017.

Nicolas Nisse

> Member of the Scientific Committee of GRASTA'17, 8th workshop on GRAph Searching, Theory & Applications, Anogia, Crete, Greece, April 10–13, 2017;
>
> FCT'17: 21st International Symposium on Fundamentals of Computation Theory, Bordeaux, France, September 11-13, 2017.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Jean-Claude Bermond

> Computer Science Reviews, Discrete Mathematics, Discrete Applied Mathematics, Journal of Graph Theory, Journal of Interconnection Networks (Advisory Board), Mathématiques et Sciences Humaines, Networks, Parallel Processing Letters, the SIAM book series on Discrete Mathematics, Transactions on Network Optimization and Control, Algorithms and Applications.

David Coudert

> Discrete Applied Mathematics (Elsevier), Networks (Wiley).

Frédéric Giroire

> Journal of Interconnection Networks (World Scientific).

Frédéric Havet

> Discrete Mathematics and Theoretical Computer Science.

Bruce Reed

> Journal of Graph Theory, Electronic Journal of Combinatorics.

9.1.3.2. Reviewer - Reviewing Activities

Members of COATI have reviewed numerous manuscripts submitted to international journals, including: Algorithmica, Algorithms, Bulletin of the Malaysian Mathematical Sciences Society, Computer Communications, Computer Networks, Computers & Operations Research, Discrete Applied Mathematics, European Journal of Operational Research, IEEE/OSA Journal of Lightwave Technology, Networks, Photonic Network Communications, The Computer Journal, Theoretical Computer Science, IEEE/ACM Transactions on Communications, IEEE/ACM Transactions on Networking, IEEE Transactions on Network and Service Management, etc.

9.1.4. Invited Talks

Julien Bensmail

> Seminar of the Graphs and Optimisation team, LaBRI, Bordeaux (April 28, 2017): "On augmenting matchings via bounded-length augmentations".

David Coudert

> Seminar of the MAORE team, LIRMM, Montpellier (January 20, 2017): "Design of reliable fixed microwave backhaul networks";
>
> Joint ACP and GdR RO Summer School on Constraints and Operational Research, Porquerolles, France (September 18-22, 2017): "On the Flinders Hamiltonian Cycle Problem Challenge";
>
> Seminario del Doctorado en Ingeniera de Sistemas Complejos, Santiago, Chile (November 23, 2017): "On the Flinders Hamiltonian Cycle Problem Challenge".

Guillaume Ducoffe

Logic seminar, University of Bucharest, Romania (March 2, 2017): "Treewidth vs. Tree-length";

Scientific seminar, West University of Timisoara, Romania (April 26, 2017): "Revisiting Preferential Attachment with applications to Twitter";

International Workshop on Graphs, Networks and Digital Humanities, Bucharest, Romania (October 9, 2017): "Revisiting Preferential Attachment with applications to Twitter".

Frédéric Giroire

Entretiens Jacques Cartier, Concordia University, Montréal, Canada (October 17-18, 2017): "Towards Energy Efficient Networks with SDN and Virtualization";

SDN Day, IRT SystemX, Palaiseau, France (November 23, 2017): "Approximation algorithms for the Placement of Ordered Service Function Chains".

Nicolas Nisse

Seminar of the ACRO team, LIF, Marseille (July 10, 2017): "Recovery of disrupted airline operations".

Luc Hogie, Michel Syska

Action GRAMINEES (GRaph data Mining in Natural, Ecological and Environnemental Sciences), journées Science des Données MaDICS (Masses de Données, Informations et Connaissances en Sciences), Marseille, France (June 23, 2017): "Bibliothèque de fouille de graphe".

9.1.5. Leadership within the Scientific Community

David Coudert

Member of the steering committee of *Pôle ResCom du GDR RSD du CNRS* since 2005, and co-chair since June 2017;

Member of the steering committee of *Rencontres francophones sur les aspects algorithmiques des télécommunications* (AlgoTel).

Frédéric Giroire

Member of the steering committee of *GT Energy of the GDR RSD du CNRS*.

Frédéric Havet

GT Graphes du GDR IM du CNRS;

Journées Graphes et Algorithmes (JGA);

Journées Combinatoire et Algorithmes du Littoral Méditerranéen (JCALM).

9.1.6. Scientific Expertise

Jean-Claude Bermond

Expert for DRTT-MESR (Crédit impôt recherche (CIR et agréments)).

David Coudert

Expert for the Future and Emerging Technologies Open (FET-Open) European program (RIA Cut-off September 27, 2017);

Expert for "Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur" (HCERES).

Frédéric Giroire

Expert for ANR.

Frédéric Havet

Expert for ANR and NSERC.

9.1.7. Research Administration

Jean-Claude Bermond

> Responsible for the cooperation between Inria and Greece (meeting with the French Embassy in Greece, obtention of join grants and of financial support for internships via the Bodossakis Fundation).

Christelle Caillouet

> Elected member of CPRH (Comité Permanent de Ressources Humaines) University of Nice Sophia Antipolis;

> Elected member of I3S laboratory committee since December 2016;

> Recruiting committee (comité de sélection) University of Lyon.

David Coudert :

> President of "Comité de Sélection" SCIENCES / 27-PR-388, Université Nice-Sophia Antipolis, 2017;

> Nominated member for Inria at the doctoral school STIC since September 2017;

> Member of the "Comité de Suivi Doctoral" of Inria;

> Member of the scientific council of Academy RISE (Networks, Information, Digital Society) of UCA^{JEDI}.

Frédéric Giroire :

> Elected member of I3S laboratory committee since 2012 (reelected in December 2016);

> In charge of the internships of stream UbiNet of Master 2 IFI, UNS.

Frédéric Havet :

> Responsible of the ComRed Team of I3S.

Joanna Moulierac

> Member of a "Comité de sélection" in Marseille, France, for the 27th section;

> Member of the "Conseil de Département Informatique" of IUT Nice.

Nicolas Nisse

> Elected member (deputy) of the "Comité de Centre" of Inria Sophia Antipolis.

Michel Syska

> Elected member of CPRH (Comité Permanent de Ressources Humaines) University of Nice-Sophia Antipolis;

> Recruiting committee (comité de sélection) University of Nice-Sophia Antipolis.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence

Julien Bensmail

> *Recherche opérationnelle*, 82h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

> *Systèmes de gestion de bases de donnés*, 86h ETD, Level L2, IUT Nice Côte d'Azur, UNS.

Christelle Caillouet

> *Object-Oriented Programming*, 60h ETD, Level L1, IUT Nice Côte d'Azur, UNS.

Guillaume Ducoffe

Introduction Programmation Java, 9h ETD, Niveau L1, Polytech Nice Sophia.

Nicolas Huin

Architecture des réseaux, 21h ETD, Niveau L1, IUT de Nice Côte d'Azur, UNS;

Programmation répartie, 21h ETD, Niveau L2, IUT de Nice Côte d'Azur, UNS;

Compléments d'algorithmique, 21h ETD, Niveau L2, IUT de Nice Côte d'Azur, UNS.

Nicolas Nisse

Introduction à l'algorithmique, 24h ETD, MPSI, Lycée International Valbonne, France.

Joanna Moulierac

Networks, 100h ETD, Niveau L1, IUT Nice Côte d'Azur, UNS;

Algorithmics, 30h ETD, Niveau L1, IUT Nice Côte d'Azur, UNS;

Algorithmics, 30h ETD, Niveau L2, IUT Nice Côte d'Azur, UNS.

Andrea Tomassilli

Informatique théorique 2, 24h, Niveau L3, Polytech Nice Sophia.

Introduction to UNIX and Linux, 12h, Niveau L3, Polytech Nice Sophia.

Michel Syska

Operating Systems: Advanced Programming, 90h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Data Structures and Algorithms, 54h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Algorithmics, 51h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Distributed Programming, 51h ETD, Level L2, IUT Nice Côte d'Azur, UNS;

Introduction to Algorithms and Complexity, 30h ETD, Level L3, IUT Nice Côte d'Azur, UNS;

IT foundations, 26h ETD, Level L1, IUT Nice Côte d'Azur, UNS;

Digital culture, 10h ETD, Level L3, IUT Nice Côte d'Azur, UNS.

Master

David Coudert

Algorithms for Telecoms, 32h ETD, stream UbiNet of Master 2 IFI and Master RIF, UNS;

Hamiltonian Cycles, 4h ETD, M2 MDFI, Aix-Marseille University, France.

Frédéric Giroire

Algorithmics of Telecommunications, 18h ETD, stream UbiNet of Master 2 IFI, UNS;

Green Networks, 18h ETD, stream UbiNet of Master 2 IFI, UNS;

Introduction to probability and statistics, 15h ETD, International Master 1, UNS.

Stéphane Pérennes

Calcul concurrent et distribué en Java, 60h ETD, Level M1, Miage, Polytech Nice Sophia.

Nicolas Nisse

Graph Algorithms, 18h ETD, stream UbiNet of Master 2 IFI and Master RIF, UNS;

Resolution Methods, 15h ETD, M1 international, UNS;

Matching and Graph decompositions, 4h ETD, M2 MDFI, Aix-Marseille University.

9.2.2. Supervision

9.2.2.1. Ph.D. theses

PhD: Nicolas Huin, *Energy efficient software defined networks* https://team.inria.fr/coati/phd-defense-of-nicolas-huin/, Université Côte d'Azur, September 28, 2017. Co-supervisors: Frédéric Giroire, Dino Lopez (Signet, I3S).

PhD in progress: Fionn McInerney, *Combinatorial Games in Graphs*, since October 2016. Supervisor: Nicolas Nisse.

PhD in progress: William Lochet, *Substructures in digraphs*, since September 2015. Co-supervisors: Frédéric Havet and Stéphan Thomassé (ÉNS Lyon).

PhD in progress: Yelena Yuditsky, School of Computer Science, McGill University. Supervisor: Bruce Reed.

PhD in progress: Andrea Tomassilli, *Diffusion of information on large dynamic graphs*, since October 2016. Supervisors: Stéphane Pérennes and Frédéric Giroire.

PhD in progress: Thibaud Trolliet, *Exploring Trust on Twitter*, since October 2017. Co-supervisors: Arnaud Legout (DIANA) and Frédéric Giroire.

PhD (stopped for reorientation): Steven Roumajon, *Les déterminants de la compétitivité régionale : données microéconomiques et réseaux d'innovation*, from November 2015 until June 2017. Co-supervisors: Patrick Musso (Gredeg) and Frédéric Giroire.

9.2.2.2. Internships

Rohit Agarwal

Date: from March 2017 until August 2017

Institution: stream UbiNet of Master 2 IFI, Université Nice-Sophia Antipolis (France)

Supervisors: Frédéric Giroire

Subject: Random graph models for directed social graphs like Twitter

Eleni Batziou

Date: from November 2017 until May 2018

Institution: Master 2, National Technical University of Athens (Greece)

Supervisors: David Coudert

Subject: Enhancing urban mobility with shared on-demand services

Thibaut Blanc

Date: from May 2017 until August 2017

Institution: Licence 3, École Normale Supérieure de Rennes (France)

Co-supervisors: Julien Bensmail, Frédéric Havet

Subject: BMRN-colouring of digraphs

Samir Idwy

Date: from April 2017 until August 2017

Institution: Master 2, Institut National des Postes et Télécommunications (Morocco)

Supervisors: David Coudert

Subject: Transports collectifs personnalisés dans la ville

Lokesh Jain

Date: from June 2017 until August 2017

Institution: Master 2, Birla Institute of Technology and Science (India)

Context: Google Summer of Code (GSoC) 2017

Co-supervisors: David Coudert, Dmitrii Pasechnik (University of Oxford, UK)

Subject: Modular decomposition of graphs in Sagemath

Marko Oleksiyenko

Date: from March 2017 until August 2017

Institution: stream UbiNet of Master 2 IFI, Université Nice-Sophia Antipolis (France)

Co-supervisors: David Coudert, Nicolas Nisse

Subject: 2-mode itinerary computation

Panagiotis Pylarinos

Date: from November 2016 until May 2017

Institution: Master 2, National and Kapodistrian University of Athens (Greece)

Supervisors: David Coudert

Subject: Inclusion of dynamic ride-sharing in multimodal trip planning

Maria Spyrakou

Date: from June 2017 until August 2017

Institution: Master 2, National and Kapodistrian University of Athens (Greece)

Context: Google Summer of Code (GSoC) 2017

Co-supervisors: David Coudert, Dmitrii Pasechnik (University of Oxford, UK)

Subject: Modular decomposition of directed graphs in Sagemath

Thibaud Trolliet

Date: from February 2017 until July 2017

Institution: Master 2, École Normale Supérieure de Lyon (France)

Co-supervisors: Frédéric Giroire, Stéphane Pérennes

Subject: Modélisation du graphe des suivis de Twitter

9.2.2.3. Last-year internships

Othmane Bensouda Korachi

Date: from November 2017 until December 2017

Institution: stream UbiNet of Master 2 IFI, UNS

Co-supervisors: Christelle Caillouet, Frédéric Giroire

Subject: Maintaining wireless sensor networks using drones and wireless power transfer

Laila Daanoun

Date: from November 2017 until December 2017

Institution: stream UbiNet of Master 2 IFI, UNS

Co-supervisors: Christelle Caillouet, Frédéric Giroire

Subject: Maintaining wireless sensor networks using drones and wireless power transfer

Mohamed Janati Idrissi

Date: from November 2017 until December 2017

Institution: stream UbiNet of Master 2 IFI, UNS

Co-supervisors: Christelle Caillouet, David Coudert

Subject: Mobile target covering for efficient aerial data gathering

Nirmal Vadakke Palangatt

> Date: from November 2017 until December 2017
>
> Institution: stream UbiNet of Master 2 IFI, UNS
>
> Co-supervisors: David Coudert, Nicolas Nisse
>
> Subject: Routing in multimodal networks with bicycles

Mykhailo Zima

> Date: from November 2017 until December 2017
>
> Institution: stream UbiNet of Master 2 IFI, UNS
>
> Co-supervisors: David Coudert, Nicolas Nisse
>
> Subject: Routing in multimodal networks with bicycles

Weilin Zhou

> Date: from November 2017 until December 2017
>
> Institution: stream UbiNet of Master 2 IFI, UNS
>
> Co-supervisors: Frédéric Giroire, Joanna Moulierac
>
> Subject: Optimization methods for network slicing

9.2.3. Juries

Jean-Claude Bermond

> President of the jury for the 2017 award "Charles Delorme" for the best PhD thesis in graph theory (http://gtgraphes.labri.fr/pmwiki/pmwiki.php/PrixTheseDelorme/);
>
> Member of the jury Robertval (http://prixroberval.utc.fr/).

David Coudert :

> Referee and member of the PhD jury of Lorenzo Severini, GSSI, L'Aquila, Italy, April 20, 2017;
>
> President of the PhD jury of Guillaume Perez, Université Côte d'Azur, September 29, 2017;
>
> External referee in the PhD thesis monitoring committee of M. Amine Ait-Ouahmed, Université d'Avignon et des Pays de Vaucluse, October 27, 2017;
>
> External referee for authorizing Fen Zhou to enroll in the HDR program, Université d'Avignon et des Pays de Vaucluse, November 2017.

Frédéric Giroire

> Member of the PhD jury of Radu Carpa, ÉNS Lyon and Univ. Lyon, October 26, 2017;
>
> Member of the PhD jury of Nicolas Huin, Université Côte d'Azur, September 28, 2017.

Frédéric Havet

> Referee and member of the PhD jury of Lucas Pastor, Université Grenoble Alpes, November 23, 2017.

Nicolas Nisse

> Member of the PhD jury of Pedro Montealegre, Univ. Orléans, February 28, 2017;
>
> Member of the PhD jury of Sylvain Legay, Univ. Paris Saclay, March 1, 2017;
>
> Referee and member of the PhD jury of Noël Gillet, Université Bordeaux, March 10, 2017;
>
> Referee and member of the PhD jury of Antoine Naudin, Aix-Marseille Université, October 25, 2017.

9.2.4. Teaching responsibilities

Joanna Moulierac

> "Directrice d'études" for the 1st-year students of IUT Nice Côte d'Azur, Département Informatique (since September 2017).

9.3. Popularization

Jean-Claude Bermond

> Gave a talk "50 years of passion trying to solve delectable problems about graphs and networks" on March 24 during a seminar C@fé ADSTIC organized by the ADSTIC (Doctoral Association of the SophiaTech campus).

Nathann Cohen and David Coudert

> Article "le défi des 1001 graphes" [61] relating how we addressed (and won) the Flinders Hamiltonian Cycle Project Challenge. Published in Interstices on December 12, 2017.

Frédéric Havet

> Co-organised the "Village des Sciences" of Vinon-sur-Verdon, France, October 9-14, 2017. Gave many talks and animated several stands during the whole week;

> Animated a stand "Mathémagie" at the "Village des Sciences" of Aix-en-Provence, October 8, 2017;

> Organised the "Science Tour" at Rians, January 25-28, 2017. Animated several stands during the four days;

> Gave the conferences "Beauty in Mathematics", "Le métier de chercheur", "La science du ballon de football" to five classes of the International School of Manosque, France, during the "Semaine des Mathématiques", March 13-19, 2017;

> Gave an interactive conference and animated stands about "Becs, pattes et plumes des oiseaux" and " Nids des oiseaux" to four classes at Rians elementary school, France, January 9 and March 23, 2017;

> Gave the conference "Élégance en Mathématiques" at Valgaudemar, France, July 6, 2017;

Frédéric Havet, Joanna Moulierac

> Supervised the one-week internship of two 3eme schoolboys.

Nicolas Nisse

> Co-organized (with "Les petits débrouillards", see http://www.lespetitsdebrouillards.org/) series of animations for a group of schoolboys, Inria Sophia Antipolis, July 20, 2017;

> Animated, during "Fête de la Science", several stands during the "Village des Sciences" at Vinon-sur-Verdon, France, October 10-13, 2017;

> Animated, during "Fête de la Science", several stands in Palais des Congrès de Juan-Les-Pins, October 7-8, 2017;

> Realization of series of posters for scientific popularization [62], [63], [64], [65];

> Member of MASTIC (Médiation et Animation scientifiques Inria, see https://project.inria.fr/mastic/).

Frédéric Havet, Joanna Moulierac, Nicolas Nisse

> Involved in the GALEJADE project supported by Fondation Blaise Pascal. The main objective of this project is to develop a series of games for initiating schoolchildren to graphs and algorithms, and to put them in a pedagogical kit and on the web.

<h1 style="text-align:center; color:red;">DIANA Project-Team</h1>

9. Dissemination

9.1. Promoting Scientific Activities

Chadi Barakat is on the editorial board of the Computer Networks journal, and was on the Technical Program Committee for the ACM Internet Measurement Conference (IMC) 2017, the International Teletraffic Congress (ITC) 2017 and the IEEE Measurement and Networking (M&N) Workshop 2017. He co-chaired the poster session at the ACM Internet Measurement Conference (IMC) 2017 and was session chair at the same conference. He is currently the scientific referee for international affairs at Inria Sophia Antipolis and member of the Conseil d'Orientation Scientifique et Technologique at Inria within the working group of international affairs (COST-GTRI).

Walid Dabbous is member of the scientific council of the Inria Bell-Labs laboratory on Communication networks of the future. He also servers as a chair of the scientific committee of the User Centric Networking (UCN@Sophia) Laroratory of Excellence, and member of the scientific committee of the Academy 1 of the UCAJedi Idex. He is also member of the Ubinet International Master program steering committee. He is member of the Inria Sophia Antipolis project committee's bureau (Bureau du CP).

Arnaud Legout is on the editorial board of the Computer Networks journal. Arnaud Legout is the president of the Commission of the users of IT resources of Sophia Antipolis Inria research center.

Damien Saucez was TPC member of IEEE ICC 2017, IEEE CCNC 2017. In 2017, Damien Saucez have co-organised the ACM SIGCOMM Reproducilbity workshop, as detailed above. He also co-organized the RESCOM 2017 summer school that aimed at gathering French communities working around networking. We were in charge of organizing the student poster sessions [28] and to give labs on computer-network simulations.

Thierry Turletti, Senior ACM and IEEE member, served in the program committees of the following international workshops and conferences: the 8th Workshop on ns-3 at Porto, Portugal in June 13-14, 2nd CoRes Workshop at Quiberon, France in May 29-30 2017. He is member of the Editorial Boards of the Journal of Mobile Communication, Computation and Information (WINET) published by Springer Science and of the Advances in Multimedia Journal published by Hindawi Publishing Corporation. Thierry Turletti is president of the Committee for Technological Development (CDT) and member of the committee NICE that studies postdoc and visiting researcher applications at Inria Sophia Antipolis.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master Ubinet: Chadi Barakat and Walid Dabbous, Evolving Internet, 31.5 hours, M2, University of Nice-Sophia Antipolis, France.

Master Ubinet: Chadi Barakat and Walid Dabbous, Internet Measurements and New Architectures, 31.5 hours, M2, University of Nice-Sophia Antipolis, France.

Master Ubinet: Arnaud Legout, From BitTorrent to Privacy, 36 hours, M2, University of Nice-Sophia Antipolis, France.

Master 1 International: Chadi Barakat, Algorithms for Networking, 22.5 hours, M1, University of Nice-Sophia Antipolis, France.

Master 1 International: Arnaud Legout, Oral and written communications, 18 hours, M1, University of Nice-Sophia Antipolis, France.

Master Estel: Chadi Barakat, Voice over IP, 9 hours, University of Nice-Sophia Antipolis, France.

Master IUP GMI: Damien Saucez, Security and privacy in networks, 38h, M2, University of Avignon, France.

IUT : Damien Saucez, Advanced Network Services and Operator Network Technologies, 27h, L1 and L2, University of Nice-Sophia Antipolis, France.

E-learning

Python: Arnaud Legout and Thierry Parmentelat are co-authors of the MOOC Python 3 : "Python 3 : des fondamentaux aux concepts avancés du langage" that lasts 9 weeks on FUN (https://www.france-universite-numerique-mooc.fr/), UCA. For the first session there were 11677 registered persons.

This MOOC is a brand new version of the past MOOC "Python: des fondamentaux à l'utilisation du langage" in Python 2. This new MOOC has been funded by UCA.

9.2.2. Supervision

PhD in progress: Yanis Boussad started his PhD on "Large scale characterization of the exposition to microwaves" in October 2017. He is co-supervised with Leonardo Lizzi, LEAT.

PhD in progress: Thibaut Ehlinger: started his PhD on "Mapping Quality of Service metrics to user Quality of Experience in the Internet" in November 2017. He is co-supervised by Chadi Barakat and Vassilis Christophides (EPI MiMove, Inria Paris).

PhD in progress: Karyna Gogunska works on "Empowering Virtualized Networks with Measurement As a Service (MaaS)" since October 2016. Her thesis is co-supervised by Chadi Barakat and Guillaume Urvoy-Keller (I3S).

PhD in progress: Muhammad Jawad Khokhar works on "From Network Level Measurements to Expected Quality of User Experience" since September 2016. His PhD is supervised by Chadi Barakat.

PhD in progress: Mohamed Naoufal Mahfoudi works on cross-layer optimization techniques for next generation MIMO-based networks since November 2015. His thesis is co-supervised by Walid Dabbous and Robert Staraj (LEAT).

PhD in progress: Ghada Moualla works on "the problem of network faults and how to circumvent them by the means of Software Defined Networking, virtualization, and service function chaining" since November 2015. Her thesis is co-supervised by Thierry Turletti and Damien Saucez.

PhD in progress: Vitalii Poliakov works on "the application of Software Defined Networking on 5G networks in order to optimise the Quality of Experience of network services" since November 2015. His thesis is co-supervised by Damien Saucez and Lucile Sassatelli (I3S).

PhD in progress: Hardik Soni works on "Software Defined Networking in challenged environments" since September 2014. His thesis is co-supervised by Thierry Turletti and Walid Dabbous.

PhD in progress: Iman Taibi started his PhD in the Dionysos project-team on "Big data analysis for network monitoring and troubleshooting" in November 2017. She is co-supervised by Gerardo Rubino, Yassine Hadjadj-Aoul and Chadi Barakat.

PhD in progress: Mathieu Thiery started his PhD in the Privatics project-team on "Data protection of connected objects and smartphones" in April 2017. He is co-supervised by Vincent Roca and Arnaud Legout.

PhD in progress: Thibaud Trolliet started his PhD on "Exploring trust on Twitter" in octobre 2017. He is co-supervised with Frederic Giroire.

PhD: Luigi Vigneri defended his PhD on "Vehicles as a Mobile Cloud: Leveraging mobility for content storage and dissemination" in July 2017. His thesis was co-supervised by Chadi Barakat and Thrasyvoulos Spyropoulos (Eurecom).

9.2.3. Juries

Chadi Barakat served as reviewer of Wenqin Shao PhD thesis, "Measurement-based inter-domain traffic engineering: Scalability, data interpretation and network event visibility" defended in November at Telecom ParisTech.

Chadi Barakat served as reviewer of Danilo Giordano PhD thesis, "Machine Learning and Bigdata Methodologies for Network Traffic Monitoring" defended in March at Politecnico di Torino.

Walid Dabbous serves as reviewer of Cédric Baudoin HDR thesis, "Optimisation et intégration des réseaux de télécommunication par satellite", that will be defended on January 2018 Institut National Polytechnique de Toulouse (INP Toulouse).

Walid Dabbous serves as reviewer of Mathieu Bouet HDR thesis, "Software networks : Orchestration, resilience, and programmability concerns", defended in July 2017 at UPMC Sorbonne Universités.

Walid Dabbous serves as jury member of Giovanni Neglia HDR thesis, "Delay Tolerant Networks", defended in February 2017 at University of Nice Sophia Antipolis.

Walid Dabbous served as jury member of Nicolas Huin PhD thesis, "Energy Efficient Software Defined Networks", defended on September 28, 2017 at the University of Nice Sophia Antipolis.

Walid Dabbous served as a jury member for the mid-term rieview of the Ph.D. thesis of Sumit Kymar (Eurecom).

Arnaud Legout serves as a jury member for the intermediate validation of the Ph.D. thesis of Athanasios Andreou (Eurecom, UPMC)

Thierry Turletti served as reviewer of Mediwaththe Gedara Chathurika Prasadini Mediwaththe PhD thesis, "Game-theoretic Methods for Small-scale Demand-side Management in Smart Grid", defended on January 2017 at the Faculty of Engineering, University of New South Wales, Australia.

Thierry Turletti served as reviewer of Pascal Thubert PhD thesis, "Converging over Deterministic Networks: For an Industrial Internet", defended on March 2017 at the Université Bretagne Loire, France.

Thierry Turletti served as jury member of Myriana Rifai PhD thesis, "Next-Generation SDN Based Virtualized Networks", defended on September 25 2017 at the University of Nice-Sophia Antipolis, France.

Thierry Turletti served as reviewer of Gentian Jaklari HDR thesis, "Thinking Outside the Networking Box for Realizing the Potential of Wireless Networks", defended on November 14 2017 at INP Toulouse, France.

9.3. Popularization

Chadi Barakat keeps participating to the organization of the Mediterranean Students Days @ Campus SophiaTech. The fifth edition took place on Feb 28 - March 2, 2017, and the sixth edition will take place on February 12 - 14, 2018. All details on this event can be found at http://univ-cotedazur.fr/events/meddays.

Arnaud Legout and Damien Saucez participated in the "fête de la science" event. They presented the ElectroSmart project and the R2lab Testbed.

Walid Dabbous published a popularization article on Network Architecture for Big Data in the book "Les Big Data à découvert" edited by CNRS editions [29].

Damien Saucez is part of the MASTIC [0] group at Inria. MASTIC groups all the activities for scientific dissemination for Inria Sophia Antipolis. Within this activity we visit schools to make conferences on Internet and privacy related matters and Arnaud Legout made a talk during MathC2+. Within the team, we gave a 3h game-based class to Collège interns that made an internship at Inria in November to introduce them to the fundamental algorithms used in the Internet (shortest-path, longest prefix matching, distance-vector, AIMD). We also served on the Inria stand for "fête de la science" to welcome kids and families and present mathematical games, the R2LAB testbed, and Electrosmart. In December 2017 Damien Saucez made a Café-in in Sophia Antipolis which is a 1h informal talk on the presenter's research with all Inria collaborators (administrative, technical, and scientific). In addition to these regional activities, we also took part in the ICN Fun MOOC [0] where Damien Saucez made a 10 minutes explanations of the fundamentals behind Operating Systems. As of today, the video [35] has been watched more than 9k times on YouTube.

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[0] https://project.inria.fr/mastic
[0] https://www.fun-mooc.fr/courses/inria/41014/session01/about

<div align="center" style="color:red">**FOCUS Project-Team**</div>

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

I. Lanese: Scientific coordinator of the International Training School on Reversible Computation (28-31/8/2017, Torun, Poland), organized by the COST Action IC1405 on Reversible Computation - Extending Horizons of Computing

9.1.1.2. Member of the Organizing Committees (conferences and schools)

S. Giallorenzo: Publicity Chair for 1st Conference on Microservices 2017 (Microservices 2017)

I. Lanese: Publicity Chair for 12th International Federated Conference on Distributed Computing Techniques (DisCoTec 2017)

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

M. Bravetti: 15th International Conference on Software Engineering and Formal Methods (SEFM 2017); 2017 IEEE International Conference on Big Data (IEEE BigData 2017); 29th IFIP International Conference on Testing Software and Systems (ICTSS 2017).

U. Dal Lago: 26th Annual Conference of the European Association for Computer Science Logic (CSL 2017); 2nd International Conference on Formal Structures for Computation and Deduction (FSCD 2017).

S. Giallorenzo: 32nd Annual ACM/SIGAPP Symposium On Applied Computing (SAC 2017)

I. Lanese: 14th International Conference on Formal Aspects of Component Software (FACS 2017); 9th Conference on Reversible Computation (RC 2017); 10th Interaction and Concurrency Experience (ICE 2017).

S. Martini: 14th Annual Conference on Theory and Applications of Models of Computation (TAMC 2017); Fourth International Conference on History and Philosophy of Computing (HAPOC 2017); DIDAMATICA - Informatica per la Didattica (DIDAMATICA 2017).

D. Sangiorgi: 11th edition A.P. Ershov Informatics Conference (PSI Conference Series); 11th Int. Conference on Language and Automata Theory and Applications (LATA); 28th International Conference on Concurrency Theory (CONCUR 2017); 18th Italian Conference on Theoretical Computer Science (ICTCS 2017); 45th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL).

G. Zavattaro: 5th International Workshop on Foundations of Coordination Languages and Self-Adaptive Systems (FOCLASA 2017), Trento, Italy, 6–10 September, 2017; 6th European Conference on Service-oriented and Cloud Computing (ESOCC'17), Oslo, Norway, 27–29 September, 2017; 28th International Conference on Concurrency Theory (CONCUR'17), Berlin, Germany, 5–8 September 2017.

9.1.2.2. Member of the Editorial Boards

U. Dal Lago: Logical Methods in Computer Science; Mathematical Structures in Computer Science.

M. Gabbrielli: Int. Journal Theory and Practice of Logic Programming.

C. Laneve: Frontiers in ICT (Section Formal Methods).

I. Lanese: Editor in chief of the Open Journal of Communications and Software (Scientific Online).

D. Sangiorgi: Acta Informatica, Distributed Computing, RAIRO Theoretical Informatics and Applications.

9.1.3. Invited Talks

U. Dal Lago: lecturer at the International School "A Brief Introduction to Probabilistic and Quantum Programming", Universidade do Minho.

I. Lanese: lecturer at the International Training School on Reversible Computation (28-31/8/2017, Torun, Poland), organized by the COST Action IC1405 on Reversible Computation - Extending Horizons of Computing

D. Sangiorgi: invited talk at the event "Celebrating 20 years of IRAFS (The International Research Area on Foundations of the Sciences)", Pontifical Lateran University, Rome.

G. Zavattaro: Invited talk at '15th International Workshop on Foundations of Coordination Languages and Self-Adaptative Systems (FOCLASA'17)".

9.1.4. Leadership within the Scientific Community

U. Dal Lago has been elected member of the Scientific Council of the Italian Chapter IC-EATCS (November 2017).

S. Martini is a member of the Executive Board of EQANIE (European Quality Assurance Network for Informatics Education); he has been nominated vice-president, starting 1 January 2018.

S. Martini is a member of the Council of the Commission on History and Philosophy of Computing, an organism of the International Union for History and Philosophy of Science, 2017-2021.

S. Martini is a member of the Board of CINI (Italian National Interuniversity Consortium for Informatics), designated by the Ministry for Semplificazione e Pubblica Amministrazione, from 2015.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Mario Bravetti

    Master: "Linguaggi, Compilatori e Modelli Computazionali", 120 hours, 1st year, University of Bologna, Italy.

- Ugo Dal Lago

    Undergraduate: "Introduction to Programming in Python", 20 hours, 1st year, University of Bologna, Italy.

    Undergraduate: "Optimization", 36 hours, 2nd year, University of Bologna, Italy.

    Master: "Foundations of Logic for Computer Science", 24 Hours, 2nd year. University of Bologna, Italy.

    Master: "Cryptography", 36 Hours, 2nd year, University of Bologna, Italy.

- Maurizio Gabbrielli

    Undergraduate: "Programming languages", 40 hours, 2nd year, University of Bologna, Italy.

    Master: "Artificial Intelligence", 60 hours, 2nd year, University of Bologna, Italy.

- Saverio Giallorenzo

    Undergraduate: "Laboratorio di Operating Systems", 40 hours, 2nd year, University of Bologna, Italy.

- Ivan Lanese

    Undergraduate: "Architettura degli Elaboratori", 56 hours, 1st year, University of Bologna, Italy.

Master: "Ingegneria del Software Orientata ai Servizi", 22 hours, 2nd year, University of Bologna, Italy.

- Cosimo Laneve

    Undergraduate: "Programmazione", 70 hours, 1st year, University of Bologna, Italy.

    Master: "Analisi di Programmi", 42 hours, 1st year, University of Bologna, Italy.

- Simone Martini

    Undergraduate: "Introduction to programming in Python", 78 hours, 1st year, University of Bologna, Italy.

    Undergraduate: "Programming in Python", 72 hours, 1st year, University of Bologna, Italy.

    Undergraduate: "Computer abilities for biologists", 8 hours, 1st year, University of Bologna, Italy.

- Davide Sangiorgi

    Undergraduate: "Operating Systems", 110 hours, 2nd year, University of Bologna, Italy.

- Gianluigi Zavattaro

    Undergraduate: "Computer Architectures", 60 hours, 1st year, University of Bologna, Italy

    Undergraduate: "Algoritmi e strutture dati", 60 hours, 2nd year, University of Bologna, Italy

9.2.2. Supervision

PhD thesis completed in 2016:

- Abel Garcia Celestrin, "Analysis of Cloud Computing Systems". Supervisor C. Laneve.
- Vincenzo Mastandrea, "Deadlock analysis in ASP". Supervisors: Cosimo Laneve and Ludovic Henrio (CNRS Sophia Antipolis).
- Valeria Vignudelli, "Behavioral Equivalences for Higher-Order Languages with Probabilities". Supervisor D. Sangiorgi.

Below are the details on the PhD students in Focus: starting date, topic or provisional title of the thesis, supervisor(s). These are all PhDs in progress.

- Raphaelle Crubillé, October 2015, "Bisimulation Metrics and Probabilistic Lambda Calculi", Université Denis Diderot and University of Bologna. Supervisors Thomas Ehrhard and Ugo Dal Lago.
- Adrien Durier, September 2016, "Proving behavioural properties of higher-order concurrent languages", ENS de Lyon and University of Bologna. Supervisors: Daniel Hirschkoff and Davide Sangiorgi.
- Francesco Gavazzo, October 2015, "Coinductive Techniques for Effectful Lambda Calculi". Supervisors U. Dal Lago and D. Sangiorgi.
- Michael Lodi, January 2017, "Growth Mindset and Computational Thinking". Supervisor: S. Martini.
- Tong Liu, November 2015, "Constraint based languages for Software Defined Networks". Supervisor: Maurizio Gabbrielli.
- Stefano Pio Zingaro, November 2016, "High level languages for Internet of Things applications". Supervisors: Maurizio Gabbrielli and Ivan Lanese.

9.2.3. Juries

M. Bravetti has been member of the PhD jury of Federica Panarotto, University of Verona, Italy, May 2017. U. Dal Lago has been member of the PhD jury of Pierre Vial, Université Denis-Diderot, December 2017. D. Hirschkoff has been member of the PhD evaluation committee for Yannick Zakowski, ENS Rennes, December 2017.

9.3. Popularization

Michael Lodi and Simone Martini have carried out extended work of scientific popularization, including the following.

- They are members of the technical committee of Olimpiadi del Problem Solving (at Italian Ministry of Education), http://www.olimpiadiproblemsolving.com;

- S. Martini has given various talks at institutes and workshops on the teaching methods for Computer Science, including a talk on "Educare all'informatica nella scuola?", working day on "La cultura informatica come fattore di sviluppo" Roma, Camera dei Deputati, December 2017.

- S. Martini is coordinator of some initiatives for the 'Hour of Code' (see e.g., http://www.programmailfuturo.it). M. Lodi is also involved.

- M. Lodi is in charge of preparing material "unplugged" to teach the principles of computational thinking in elementary schools.

- M. Lodi has been involved in meetings aimed at forming teachers of elementary and high schools in the Bologna province. These include a 15-hour course "Coding e robotica: tecnologie e metodologie per una didattica integrata nella scuola secondaria di I grado", and a 12-hour course "Scratch avanzato: funzionalità e applicazione alla didattica", both organised by Fondazione Golinelli (Bologna).

- M. Lodi has given talks on computational thinking and programming languages for teaching computer science to children, including: "Coding - Che cosa è e perché?" and "Coding con Scratch", at Mathesis Piacenza; "CoderDojo: Pensiero computazionale e informatica creativa... anche a scuola?", Convention Diesse; introduction to computer science for high school students, as part of an event of introduction to management ("Giardino delle imprese"), Fondazione Golinelli, Bologna; "L'illusione del coding" and "TeacherDojo", at the contest "CoderDojo Coolest Projects Milano", Milan; "Ragazze, siate coraggiose: la vostra intelligenza puo' crescere (ma il "coding" non basta!)", at "Festival della Cultura Tecnica 2017", Bologna; a talk and youtube video "Quattro domande sul pensiero computazionale" (https://www.youtube.com/watch?v=ANlwOckhcVU).

- M. Lodi has has been member of the evaluation commission for the awards "Programma le Regole", set by Italian Ministry of Education and Research (MIUR) and "Programma il Futuro".

D. Hirschkoff takes part in several popularization activities in schools, in Lyon (association "Maths en Jeans").

9.3.1. Other duties

S. Martini is Head of the Department of Computer Science and Engineering, University of Bologna, for the term 2015-2018.

G. Zavattaro is coordinator of undergraduate studies at the Department of Computer Science and Engineering, University of Bologna (Informatica per il Management).

<p align="center">**INDES Project-Team**</p>

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. General Chair, Scientific Chair

- Ilaria Castellani was the co-chair (together with Pedro D'Argenio, Mohammad Reza Mousavi and Ana Sokolova) of the workshop "Open Problems in Concurrency Theory 2017" (OPCT'17), which was held in the Institute of Science and Technology Austria (IST Austria), from June 26 to June 29. http://opct2017.famaf.unc.edu.ar/Home.html

- Ilaria Castellani was the co-chair (together with Mohammad Reza Mousavi) of the workshop TRENDS 2017, which took place in Berlin on September 9, in association with the CONCUR 2017 conference. https://concurrency-theory.org/events/workshops/trends

7.1.1.2. Member of the Organizing Committees

- Tamara Rezk was member of the Organizing Committees of the conference Euro Security and Privacy 2017 and the workshop Secure Compilation Meeting at POPL 2017. She also is a member of the Steering Committee of the POST conference.

- Manuel Serrano is a member of the Steering Committee for the Trends in Functional Programming conference and the Programming conference.

- Nataliia Bielova was a member of the Organizing Committee of the Dagstuhl Seminar on Online Privacy and Web Transparency. https://www.dagstuhl.de/en/program/calendar/semhp/?semnr=17162

7.1.2. Scientific Events Selection

7.1.2.1. Chair of Conference Program Committees

- Nataliia Bielova was the PC co-chair (together with Marco Gaboardi) of the ACM workshop "Workshop on Programming Languages and Analysis for Security" (PLAS 2017), which took place in Dallas (USA) on 30 October 2017. http://plas2017.cse.buffalo.edu/

7.1.2.2. Member of the Conference Program Committees

- Ilaria Castellani served in the Program Committees of the conference TTCS'17 and of the workshops PLACES'17 and EXPRESS/SOS'17.

- Tamara Rezk served in the Program Committees of SecDev, Sec@SAC, ESSoS, HotSpot@Etaps.

- Manuel Serrano served the ProWeb'17 program committee.

- Nataliia Bielova served in the Program Committees of CLaw'17, MMM-ACNS'17, ProWeb'17, FCS'17, IEEE SecDev'17, IEEE CSF'17, USENIX Security Poster session, APVP'17.

7.1.2.3. Reviewer

- The team members have been reviewers for the following conferences and workshops: TTCS'17, PLACES'17, EXPRESS/SOS'17, SecDev, Sec@SAC, ESSoS, HotSpot@Etaps, ProWeb'17, CLaw'17, MMM-ACNS'17, ProWeb'17, FCS'17, IEEE SecDev'17, IEEE CSF'17, USENIX Security Poster session, APVP'17.

7.1.3. Journal

7.1.3.1. Member of the Editorial Boards

- Ilaria Castellani is a member of the editorial board of *Technique et Science Informatiques*.

- Ilaria Castellani (together with Mohammad Reza Mousavi) was guest editor for the JLAMP special issue on Trends in Concurrency Theory (Selected invited contributions from the workshops TRENDS 2014 and TRENDS 2015), J. Log. Algebr. Meth. Program., vol. 87, 2017. https://doi.org/10.1016/j.jlamp.2017.01.002.
- Tamara Rezk is a member of the editorial board of *Interstices*.

7.1.3.2. Reviewer - Reviewing Activities

- The team members have been reviewers for the following journals: JLAMP, LMCS, ACM TOIT, ACM Toplas, ACM TOPS.

7.1.4. Invited Talks

- Tamara Rezk was an invited speaker at ETH Zurich in January, at GT-Verif (during the days of the meeting Gdr Sécurité) in May, and at the Journées Scientifiques Inria in June.
- Manuel Serrano gave a keynote talk on Web Programming at the Splash META'17 workshop in September https://2017.splashcon.org/track/meta-2017.
- Nataliia Bielova was an invited speaker at DGCCRF in March, at SySoSec seminar (Rennes) in May, at Higher School of Economics (Moscow) in October, and at DNU and KPI universities (Ukraine) in November.

7.1.5. Leadership within the Scientific Community

- Ilaria Castellani is the chair of the IFIP TC1 WG 1.8 on Concurrency Theory since June 2014.
- Ilaria Castellani is a Management Committee member of the COST Action IC1405 on Reversible Computation (November 2014-November 2018).

7.1.6. Scientific Expertise

- Tamara Rezk was an expert for reviewing projects for the National Center of Science and Technology Agency (Kazakhstan) and the CMU Portugal Program in collaboration with Carnegie Mellon University.
- Nataliia Bielova was an expert for reviewing projects for the Data Transparency Lab (DTL).

7.1.7. Research Administration

- Manuel Serrano is the "Délégué scientifique" (head of research) of the Inria Sophia Antipolis Mediterranée research center. He is member of the Inria Evaluation Committee.
- Nataliia Bielova is a member of "Comité du Suivi Doctoral (CSD)" (Supervision of PhD students) of the Inria Sophia Antipolis Mediterranée research center.
- Ilaria Castellani is a member of Inria's "Comité Parité et Égalité des Chances". In the Centre of Inria Sophia Antipolis, she is a member of the "Comité d'Animation et Médiation Scientifique" and of the "Comité Scientifique du Colloquium".
- Tamara Rezk is a member of the "Commission de Développement Technologique (CDT)" of the Inria Sophia Antipolis Mediterranée research center.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Master : Tamara Rezk, Security of Web Applications, 28ETD, niveau M2, University of Nice Sophia Antipolis, France

Master : Tamara Rezk, Preuves en Cryptographie, 28ETD, niveau M2, University of Nice Sophia Antipolis, France

Master : Tamara Rezk, Security of Web Applications, 18ETD, niveau M2, University of Pierre et Marie Curie, France

Master : Nataliia Bielova, Security of Web Applications, 18ETD, niveau M2, University of Pierre et Marie Curie, France

7.2.2. Supervision

PhD in progress: Dolière Francis Somé, Security and Privacy in Web Applications, 1/11/2015, Nataliia Bielova and Tamara Rezk

PhD in progress: Mohamad Ellaz, The DDH Assumption, 1/12/2017, Benjamin Gregoire and Tamara Rezk

PhD in progress: Colin Vidal, *Programmation Web réactive*, University of Nice, 1/07/2015, Manuel Serrano and Gérard Berry.

7.2.3. Juries

- Tamara Rezk was a member of the PhD jury of Zeineb Zhioua, Eurecom.
- Manuel Serrano was a member of the PhD jury of Gabriel Radanne, University Denis Diderot.
- Nataliia Bielova was a member of the PhD jury of Pierre Laperdrix, INSA Rennes.

7.3. Popularization

Tamara Rezk and Nataliia Bielova were contributors to the Security White Report of Inria to provide an overview of the research in the area of IoT security and Web Tracking technologies carried out by Inria teams.

Nataliia Bielova has presented a joint work with Privatics team at the EU Parliament meeting dedicated to the analysis of the new EU ePrivacy Regulation in June 2017. https://www.inria.fr/en/centre/sophia/news/nataliia-bielova-at-the-european-parliament.

Nataliia Bielova gave a general audience talk on Web Tracking technologies and protection mechanisms for Web users at Carnegie-Mellon University (remotely) and SKEMA Business school in October and at Cafe-techno organised by Inria in November.

<p align="center" style="color:red">**NEO Project-Team**</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- D.Politaki was member of the organization committee of the workshop "Monde des mathematiques industrielles (MOMI)", Inria Sophia Antipolis, 27-28 February 2017.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- International Conference on Computing, Networking and Communications (ICNC 2018), symposium on Communication QoS and System Modeling (CQSM) (**G. Neglia**)

10.1.2.2. Member of the Conference Program Committees

- 18th Conference of the Société Française de Recherche Opérationnelle et d'Aide à la Décision (ROADEF 2017, Metz, France) (**A. Jean-Marie**)
- 8th Conference on Decision and Game Theory for Security (GameSec 2017, Vienna, Austria) (**K. Avrachenkov**)
- IFIP Networking 2017 Conference and Workshops: IFIP/TC6 Networking Poster and Demo Session (Stokholm, Sweden) (**G. Neglia**)
- IEEE Intl. Conference on Computer Communications (INFOCOM 2018, Honolulu, Hawaii, USA) (**G. Neglia**)
- 24th Intl. Conference on Analytical & Stochastic Modelling Techniques & Applications (ASMTA 2017, Newcastle Upon Tyne, UK) (**K. Avrachenkov**)
- 7th Intl. Conference on Game Theory for Networks (GameNets 2017, Knoxville, Tennessee, USA) (**K. Avrachenkov**)
- 29th Intl. Teletraffic Conference (ITC 2017, Genoa, Italy) (**S. Alouf**)
- 14th Workshop on Algorithms and Models for the Web Graph (WAW 2017, Toronto, Canada) (**K. Avrachenkov**)
- 19th Workshop on Mathematical Performance Modeling and Analysis (MAMA 2017, Urbana-Champaign, Illinois, USA) (**A. Jean-Marie**)

10.1.2.3. Reviewer

The members of the team reviewed numerous papers for numerous international conferences.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- *ACM Transactions on Modeling and Performance Evaluation of Computing Systems (ACM ToMPECS)* (**K. Avrachenkov** since 2015);
- *Wiley Transactions on Emerging Telecommunications Technologies* (ETT) (**S. Alouf** since July 2016);
- *Elsevier Computer Communications journal* (COMCOM) (**G. Neglia** since February 2014);
- *Elsevier International Journal of Performance Evaluation* (**K. Avrachenkov** since 2008).

10.1.3.2. Reviewer - Reviewing Activities (list in alphabetical order of journal name)

- *Elsevier Transportation Research Part C* (**G. Neglia**);
- *IEEE Transactions on Mobile Computing* (TMC) (**S. Alouf**);
- *IEEE/ACM Transactions on Networking* (ToN) (**S. Alouf**, **G. Neglia**);
- *Mathematical Methods of Operations Research* (MMOR) (**S. Alouf**);
- *Performance Evaluation* (PEVA) (**S. Alouf**, **G. Neglia**);
- *Wiley Transactions on Emerging Telecommunications Technologies* (ETT) (**S. Alouf**).

10.1.4. Invited Talks

- G. Neglia gave an invited talk at the GdR ISIS workshop "PHY-Aware Edge Caching in 5G: Convergence of Network and Information Theory in Cache-aided Wireless Networks" on "Implicit Coordination of Caches in Small Cell Networks under Unknown Popularity Profiles".

10.1.5. Leadership within the Scientific Community

- E. Altman is a fellow member of IEEE (Class of 2010).
- E. Altman and A. Jean-Marie are (elected) members of IFIP WG7.3 on "Computer System Modeling". E. Altman is also Member of WG 6.3 of IFIP on Performance of Communication Systems.

10.1.6. Research Administration

S. Alouf

- is member of the scientific committee of the joint laboratory Inria-Alstom since May 2014;
- is vice-head of project-team NEO since January 2017.

K. Avrachenkov

- together with Arnaud Legout (DIANA team) and Fabien Gandon (WIMMICS team) is co-responsible of the multi-disciplinary research theme (Action Transversale) "Semantic and Complex Networks" at Inria Sophia Antipolis - Méditerranée.

A. Jean-Marie

- is the scientific coordinator of Inria activities in Montpellier (since 2008); as part of this duty, he represents Inria at: the Scientific Council of the Doctoral School "Sciences and Agrosciences" of the Univ. of Avignon; at the Regional Conference of Research Organisms (CODOR);
- is a member of the Steering Committee of the GDR RO, a national research initiative on Operations Research sponsored by the CNRS;
- is Head of project-team NEO since January 2017.

G. Neglia

- is the scientific delegate for European partnerships for Inria Sophia Antipolis – Méditerranée since 2014;

– is member of the Inria COST GTRI (International Relations Working Group of Inria's Scientific and Technological Orientation Council since 2016;

– is member of the scientific animation committee for the IDEX UCA^{JEDI} research program "Social Interactions and Complex Dynamics" since 2017.

NEO members are in the following committees of Inria Sophia Antipolis-Méditerranée

- CLFP: Training Committee (**S. Alouf**, since November 2014);
- CSD: Doctoral Committee (**S. Alouf**, until February 2017);
- MASTIC: a commission in charge of popularization and regional and internal scientific animation (**D. Politaki**, since July 2016);
- PhD Seminars organizing committee of CRISAM (**D. Politaki**, since November 2016);
- NICE: Invited Researchers Committee (**K. Avrachenkov**, since 2010).

NEO members are in charge of the following tasks for the research center:

- Supervision and validation of the project-teams' yearly activity reports (**K. Avrachenkov**, since 2010).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence:

S. Alouf, "Probability", 33H, Undergraduate Water Engineering degree (L3), Univ. of Nice Sophia Antipolis (UNS), France.

G. Neglia, "Probability", 33.5H, Undergraduate Water Engineering degree (L3), Univ. of Nice Sophia Antipolis (UNS), France.

D. Politaki, "Langage de programmation Java", 21H, L1, IUT, France.

D. Politaki, "Programmation Avancée", 42H, M1, UNS, France.

Master:

S. Alouf, "Performance Evaluation of Networks", 31.5H, M2 IFI Ubinet, UNS, France.

A. Kadavankandy, "Random-walk based algorithms for complex network analysis" at "Winter School on Complex Networks", 2H, M1 Computer Science, UNS, France.

G. Neglia, "Distributed Optimization and Games", 31.5H, M2 IFI Ubinet, UNS, France.

G. Neglia, responsible for the "Winter School on Complex Networks", 22.5H, M1 Computer Science, UNS, France.

Doctorat:

A. Jean-Marie, "Markov Chains" and "Optimal Stochastic Control", 20h, Facultad de Ciencias Económicas y Empresariales, Univ. Valladolid, Spain.

10.2.2. Supervision

HDR defended:

Sara Alouf, Université Côte d'Azur, "From Wireless Networks to Green IT: A Journey Through Stochastic Models and Tools", 20 December 2017.

Giovanni Neglia, Université Côte d'Azur, "Delay Tolerant Networks: from modeling to optimization", 27 February 2017.

PhD defended:

Arun Kadavankandy, "Spectral analysis of random graphs with application to clustering and sampling", Université Côte d'Azur, 18 July 2017, advisors: Konstantin Avrachenkov and Laura Cottatellucci (EURECOM).

Hlib Mykhailenko, "Distributed Edge Partitioning", Université Côte d'Azur, 14 June 2017, advisor: Fabrice Huet (SCALE team).

PhD in progress:

Said Boularouk, "Helping space apprehension by visually impaired people", 1 October 2015, advisors: Eitan Altman and Didier Josselin (UAPV).

Zaid Allybokus, "Scalable Online Algorithms for SDN Controllers", 1 July 2016, advisors: Konstantin Avrachenkov and Lorenzo Maggi (Huawei).

Dimitra Politaki, "Greening data center," 1 February 2016, advisors: Sara Alouf and Fabien Hermenier (UNS).

PhD interrupted:

Alina Tuholukova, "Caching at the Edge: Distributed Phy-aware Caching Policies for 5G Cellular Networks," 1 July 2016 – 31 July 2017.

10.2.3. Juries

NEO members participated in the Ph.D. committees of (in alphabetical order):

- George Arvanitakis, "An Analytical Model for Flow-level Performance in Heterogeneous Wireless Networks", Télécom ParisTech, 27 September 2017, (**S. Alouf** as jury member)
- Victor Bucarey López, "Addressing Problem Size in Stackelberg Security Games", Univ. of Chile, 1 September 2017, (**A. Jean-Marie** as jury member)
- Justina Gianatti, "Métodos numéricos para resolver problemas de control óptimo", National Univ. of Rosario, 30 October 2017, (**A. Jean-Marie** as jury member)
- Arun Kadavankandy, "Spectral analysis of random graphs with application to clustering and sampling", Univ. Côte d'Azur, 18 July 2017, (**A. Jean-Marie** as jury president)
- Christelle Rovetta, "Simulation parfaite de réseaux fermés de files d'attente et génération aléatoire de structures combinatoires", Univ. Paris Sciences Lettres, 20 June 2017, (**A. Jean-Marie** as reviewer)
- Luigi Vigneri, "Vehicles as a Mobile Cloud: Modelling, Optimization and Performance Analysis", Univ. Côte d'Azur, 11 July 2017, (**G. Neglia** as jury member)
- Jingjing Zhang, "Interplay between caching, feedback and topology in the wireless broadcast channel", Télécom ParisTech, 26 April 2017, (**K. Avrachenkov** as jury president)

10.3. Popularization

- S. Alouf gave a radio interview to journalist J. Colombain; the interview aired on France Info on 6 August 2017 and is available here (audio + abstract): http://www.francetvinfo.fr/replay-radio/nouveau-monde/nouveau-monde-faut-il-dire-le-ou-la-wi-fi_2294141.html;
- D. Politaki participated to the "Fête de la science", Antibes Juan-les-Pins (7-8 October). She animated two games based on the pythagorean theorem and finding the shortest path respectively, Thymio and scratch.
- D. Politaki participated in the organization of MOMI: Le MOnde des Mathématiques Industrielles. This is a two-day event organized by PhD candidates of Inria's center in Sophia-Antipolis, dedicated to discovering how Mathematics are useful in the Industrial world.
- D. Politaki participated to Stage MathC2+ (18-21 Juin 2017) which is organised by Inria (SAM).

GRAPHDECO Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

G. Drettakis was a member of the ACM SIGGRAPH 2017 papers advisory board.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

G. Cirio was on the program committee of IEEE World Haptics 2017. A. Bousseau was a Papers Committee member of Eurographics 2018 and SIGGRAPH Asia 2017 technical briefs and posters, and a member of Eurographics STAR committee. G. Drettakis was a member of the ACM SIGGRAPH 2017 papers committee and of the Eurographics STAR committee.

9.1.2.2. Reviewer

A. Bousseau was a reviewer for ACM Transactions on Graphics, SIGGRAPH, SIGGRAPH Asia, Eurographics, ACM CHI Gabriel Cirio was reviewer for Eurographics, ACM SIGGRAPH, IEEE World Haptics, IEEE Transactions on Haptics, ACM UIST, IEEE 3DUI, IEEE VR. Y. Gryaditskaya was a reviewer for SIGGRAPH Asia 2017, Eurographics 2018, ACM TOG and JEI.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

A. Bousseau is an Associate Editor of The Visual Computer journal (Springer) G. Drettakis is Associate Editor of ACM Transactions on Graphics (TOG) and of Computational Visual Media (CVM).

9.1.4. Invited Talks

Y. Gryaditskaya visted the Charles University of Prague in May 2017. Adrien Bousseau gave a talk about 3D reconstruction of design drawings at Delft University.

9.1.5. Leadership within the Scientific Community

G. Drettakis chairs the Eurographics working group on Rendering. G. Drettakis chairs the local "Jacques Morgenstern" Colloquium organizing committee.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : J. Delanoy, TP Bases de donnees and personal project, niveau L1, IUT - Université Nice Sophia Antipolis, 64h

Licence : S. Rodriguez, niveau L1, 64h as a DCCE in Polytech'Nice (UCA).

Licence : J. Philip, Introduction au Web & Application du Web, niveau L2, Polytech Nice-Sophia - Université Côte d'Azur, 64h

Licence: T. Thonat, Informatique Theorique, niveau L3, Polytech Nice, Sophia-Antipolis, 64h

Master : G. Drettakis, Computer Graphics, 12h, CentraleSupelec; 6h Université Nice Sophia Antipolis, 64h

Master : A. Bousseau, Computer Graphics, 9h, CentraleSupelec; 9h Université Nice Sophia Antipolis, 64h

9.2.2. Others

Y. Gryaditskaya and V. Deschaintre attended MAM and EGSR 2017 V. Deschaintre, S. Rodriguez, J. Philip and T. Thonat attended UCA Deep Learning School, 12-15 June 2017, Sophia-Antipolis, France. S. Rodriguez, J. Delanoy, T. Thonat and J. Philip attended Eurographics 2017, 24-28 April 2017, Lyon, France. Johanna Delanoy participated in the Doctoral Consortium at Eurographics 2017. Johanna Delanoy was a Student Volunteer at Siggraph 2017.

9.2.3. Presentations

Theo Thonat presented his 3DV-2016 multi view inpainting work at the AFIG French conference.

9.2.3.1. Supervision

PhD defended: Rodrigo Ortiz-Cayon, Mixed image-based rendering, Nice Sophia Antipolis University, started Dec. 2013, defended in Feb. 2017, advisor: G. Drettakis

PhD in progress: Théo Thonat, Multi-view image processing for image-based rendering, Nice Sophia Antipolis University, started Oct. 2015, advisor: G. Drettakis

PhD in progress: Johanna Delanoy, Data-driven sketch-based modeling, Nice Sophia Antipolis University, started Oct. 2015, advisor: A. Bousseau

PhD in progress: Jean-Dominique Favreau, geometric analysis of line drawings, Nice Sophia Antipolis University, started Oct. 2014, advisors: A. Bousseau and F. Lafarge (Titane)

PhD in progress: Valentin Deschaintre, lightweight material capture, Nice Sophia Antipolis University, started Nov. 2016, advisors: A. Bousseau and G. Drettakis

PhD in progress: Julien Philip, Mixed rendering for cultural heritage, Nice Sophia Antipolis University, started Nov. 2016, advisor: G. Drettakis

PhD in progress: Simon Rodriguez, Combining image-based and procedural modeling, Nice Sophia Antipolis University, started Nov. 2016, advisor: G. Drettakis

9.2.3.2. Juries

A. Bousseau was a reviewer for the PhD of Yulia Gryaditskaya (MPI Saarbruecken), Benoit Arbelot (Inria Rhône Alpes) and T. Stanko (Inria Rhône Alpes).

9.3. Popularization

Theo Thonat gave demos of Image Based Renderings during the 2017 "Fete de la science" at the Inria stand (Oct. 7.) for school children and adults audience.

GRAPHIK Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

- **Organization of DL 2017 (30th Workshop on Description Logics)**, Montpellier, July 2017. The DL workshop is the major annual event of the Description Logic research community. It is the forum at which those interested in description logics, both from academia and industry, meet to discuss ideas, share information and compare experiences. Meghyn Bienvenu and Marie-Laure Mugnier were general co-chairs and the team GraphIK was in charge of the local organisation (Jean-François Baget, Pierre Bisquert, Stathis Delivorias, Abdelraouf Hecham, Federico Ulliana, Bruno Yun, and the team assistant, Annie Aliaga, were members of the organisation committee). https://project.inria.fr/dl2017

- **Co-organization of the Graph Based Knowledge Representation and Reasoning Workshop** associated with the **IJCAI 2017** international conference. Madalina Croitoru, with Sebastian Rudolph (Univ Dresden), Pierre Marquis (Univ Artois) and Gem Stapleton (Univ Brighton), organized this event. This is the 5th edition of this workshop series that Madalina Croitoru initiated for IJCAI 2011. http://www.lirmm.fr/~hecham/GKR/index.html

- **Co-organization of the Workshop Reasoning on Data** associated with **The Web 2018** international conference (Lyon, March 2018). Marie-Laure Mugnier, with Catherine Roussey (Irstea) and Pierre Senellart (ENS Paris, Inria Valda team), are chairs of this workshop linked to the French national action 'Reasoning on Data' common to GDR MaDICS and IA. https://sites.google.com/site/2018rod/

- **Co-organization of the International Workshop on ASP technologIes for Querying large scale multisource heterogeneous web information (WASPIQ 2017)** associated with the **IEA/AIE 2017** conference (30th International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems). M.-L. Mugnier, with Odile Papini (LSIS), Salen Benferhat (CRIL) and Laurent Garcia (LERIA), organized this workshop linked to the ANR ASPIQ project. http://waspiq2017.lsis.org.

- **Organization of a Special Track on "Agronomy and Artificial Intelligence"** associated with the **IEA/AIE 2017** conference (30th International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems). M. Croitoru and P. Bisquert organized this event. http://www.cril.univ-artois.fr/ieaaie2017/main/specialtracks

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Meghyn Bienvenu will be tutorial co-chair for the International Joint Conference on Artificial Intelligence (IJCAI) 2018.

10.1.2.2. Member of the Conference Program Committees

We are regularly members of the program committees of major conferences in AI or in databases (i.e., IJCAI, AAAI, ECAI, AAMAS, ICDT, PODS) and more focused conferences and workshops (such as RuleML+RR —Web reasoning and Rule Systems— and Description Logics). We also take part in the animation of the national community (JIAF, EGC, IC, BDA).

For 2017, we served in the following program committees:

International

- IJCAI 2017 (International Conference on Artificial Intelligence) : 1 Senior PC + 2 PC
- AAAI 2017 (AAAI Conference on Artificial Intelligence) : 2 PC
- PODS 2017 (ACM SIGMOD-SIGACT-SIGAI Symposium on Principles of Database Systems) : 1 PC
- ICDT 2017 (International Conference on Database Theory) : 1PC
- ISWC 2017 (International Semantic Web Conference) : 1 PC
- AAMAS 2017 (International Conference on Autonomous Agents and Multiagent Systems) : 1 PC
- RuleML+RR 2017 (International Joint Conference on Rules and Reasoning) : 2 PC
- EFITA 2017 (European Federation for Information Technology in Agriculture, Food and the Environment) : 2 PC
- IEA/AIE 2017 (International Conference on Industrial, Engineering, Other Applications of Applied Intelligent Systems) : 1 PC
- FQAS 2017 (International Conference on Flexible Query Answering Systems) : 1 PC

National

- JIAF 2017 (Journées Françaises d'Intelligence Artificielle Fondamentale) : 1 PC
- EGC 2017 (Extraction et Gestion des Connaissances) : 2 PC
- IC 2017 (Ingénierie des Connaissances) : 1 PC
- BDA 2017 (Conférence sur la gestion de données) : 1 PC

For 2018, we will serve in the following international program committees (list not exhaustive yet):

- IJCAI-ECAI 2018 (International Joint Conference on Artificial Intelligence joint with the the 23rd European Conference on Artificial Intelligence) : 2 Senior PC + 2 PC
- AAAI 2018 (AAAI Conference on Artificial Intelligence) 1 Senior PC + 1 PC
- RuleML+RR 2018 (International Joint Conference on Rules and Reasoning) : 1PC
- FOIKS 2018 (International Symposium on Foundations of Information and Knowledge Systems) : 1 PC
- ROD 2018 (Reasoning on Data Workshop) @ The Web 2018 : 1 PC

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- ARIMA : "Revue africaine de la recherche en informatique et mathématiques appliquées" (P. Buche)

10.1.3.2. Reviewer - Reviewing Activities

- Journal of Artificial Intelligence Research (JAIR)
- ACM Transactions on Computational Logics (ToCL)
- Information Systems Journal
- Distributed and Parallel Databases Journal (DAPD)
- EURO Journal on Decision Processes (EJPD) : Special issue on Supporting and Explaining Decision Processes by means of Argumentation

10.1.4. Invited Talks and Seminars

- J.-F. Baget, "Computing repairs (and more) with Answer Set Programming", Workshop on ASP technologIes for Querying large scale multisource heterogeneous web information (WASPIQ 2017) June 2017.
- F. Ulliana, "Ontology-Mediated Query Answering and Heterogeneous Data" 1ère journée ROD (Reasoning on Data), June 2017.

- M. Bienvenu, "Query Rewriting: Limits and Possibilities", KR seminar, Department of Computer Science of the University of Toronto, December 2017.

- R. Thomopoulos, 'Science for Food and Bioproduct Engineering at INRA: a knowledge engineering perspective", Seminar at ATEI Thessaloniki, Greece (November 2017).

- P. Buche, "Ingénierie des connaissances pour l'aide à la décision dans la filière agroalimentaire", 6ème rencontre ESOF (EuroScienceOpen Forum) sur la transformation numérique des agrochaînes, Toulouse, October 2017.

- M.-L. Mugnier, "Accès aux données médiatisé par une ontologie", 25th Anniversary of the LIRMM laboratory, November 2017.

- Marie-Laure Mugnier, "Accès aux données médiatisé par des connaissances", First seminar of the axis "Système d'information, stockage et transfert de données" of #DigitAg, November 2017

- P. Buche, "Retour d'expérience d'une pratique Open Science au sein du département CEPIA", Séminaire annuel du département INRA CEPIA à Magny-le-Hongre, Session Open Science, Octobre 2017.

- J. Fortin, "Capitaliser l'expertise et la rendre accessible : la démarche Docamex", Séminaire INRA/CEPIA, 2017.

10.1.5. Leadership within the Scientific Community

- Marie-Laure Mugnier, together with Marie-Christine Rousset (LIG), Véronique Bellon (ITAP, IRSTEA/SupAgro) and Olivier Palombi (LDAF-CHU Grenoble-Alpes) launched a national action (2017-2018, 2 years), named Reasoning on Data (Rod), common to CNRS research groups ('GDR') IA (formal and algorithmic aspects of artificial intelligence) and MaDICS (Big Data, Data Science). The aim of this action is to build a national community on the issue of knowledge representation and reasoning oriented towards better exploiting data. The first meeting was held in June 2017 within the MaDICS annual workshop. The second meeting will be held in March 2017 in association with the RoD workshop at the conference The Web 2018. For more detail, see http://www.lirmm.fr/rod/

- Patrice Buche he coordinates both the CATI (Ingénierie des Connaissances et Analyse Textuelle) INRA group (https://www6.inra.fr/cati-icat) and the INRA IN-OVIVE group (www6.inra.fr/reseau-in-ovive) for which he organized an invited session at EFITA'2017.

- Rallou Thomopoulos is coordinator of the INRA-CEPIA transversal programs on knowledge and model integration, multiperformance design, and ethical issues.

- Marie-Laure Mugnier is member of the animating committee of the GDR IA (formal and algorithmic aspects of artificial intelligence).

10.1.6. Scientific Expertise

- Rallou Thomopoulos has been elected member of the Scientific Committee of the INRA-CEPIA research division for the period 2016-2020.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

The six faculty members teach at all university levels (IUT, Licence, Master). The main courses they are in charge of are: Logics (L), Databases (M), Web Technologies (IUT), Artificial Intelligence (M), Knowledge Representation and Reasoning (M), Social and Semantic Web (M). Concerning full-time researchers in 2017, Jean-François Baget gave Master courses (40 h) and Rallou Thomopoulos was instructor for "Participative modelling and simulation", a one week full time training school for INRA-CIRAD researchers (which is held once to twice a year, since 2016).

Moreover, faculty members have some specific responsibilities in the Computer Science Licence and Master:

- Michel Leclère (Faculty): from 2011 to 2017, he managed the program "Data, Knowledge and Natural Language Processing" (DECOL), part of the Master of Computer Science (about 30 students). This program was co-managed with Federico Ulliana (Faculty) 2016, which became the coordinator for 2017.

- Marie-Laure Mugnier (Faculty): from 2011 to 2017, she was (co)-director of the Master in Computer Science, which gathers 6 programs (about 250 students). She also led the Master project for the next four years (LMD4, from 2015/16 to 2018/2019).

- Madalina Croitoru (IUT): since Sept. 2014, she manages the "année spéciale" (about 25 students).

10.2.2. Involvement in University Structures

- Michel Leclère: since Sept. 2015, he is deputy manager of the Computer Science teaching Department from the Science Faculty, University of Montpellier. He is also coordinator for the Information Systems ("sytèmes d'Informations et salles informatiques") for the Science Faculty, University of Montpellier.

- Marie-Laure Mugnier: since 2016, she is member of the Council of the Scientific Department MIPS (Mathematics Informatics Physics and Systems) of the University of Montpellier - Marie-Laure Mugnier.

10.2.3. Supervision

PhD in progress are:

- Stathis Delivorias. Supervisors: Federico Ulliana, Michel Leclère and Marie-Laure Mugnier. "Boundedness and Module extraction in Existential Rules KBs". Started Oct. 2015.

- Abdelraouf Hecham. Supervisors: Madalina Croitoru and Pierre Bisquert. "Logical argumentation with dual cognitive systems". Algerian National Ministry Grant 2015-2018.

- Bruno Yun. Supervisors: Madalina Croitoru, Rallou Thomopolous, Srdjan Vesic. "Decision Making and Ranking Semantics in Logical Argumentation Frameworks". French National Ministry Grant 2016-2019.

10.2.4. Juries

- Marie-Laure Mugnier was reviewer for the HDR of Mantas Šimkus - TU Wien (Vienna University of Technology).

- Rallou Thomopoulos was jury member of Jérémy Bénard's PHD thesis "Exploitation of an ontology of knowledge representation languages for the semantic and generic import, export and translation of knowledge representations", Université de La Réunion, June 2017.

10.3. Popularization

- M. Chein, "Sur la science informatique et son installation à Montpellier" Association Française pour l'Avancement des Sciences, Montpellier, April 2017.

- M. Chein, "L'informatique : la science au coeur du numérique", Académie des Sciences et Lettres de Montpellier, May 2017.

- J.-F. Baget, Animation of a panel on "Artificial Intelligence", Lycée Jean Monnet, Montpellier, December 2017.

HEPHAISTOS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- J-P. Merlet is a member of the scientific committee of the European Conference on Mechanism Science (EUCOMES), chairman of the scientific Committee of the Computational Kinematics workshop, a member of the steering Committee of IROS

- Y. Papegay is a permanent member of the International Steering Committee of the International Mathematica Symposium conferences series. He is a member of the OpenMath Society, building an extensible standard for representing the semantics of mathematical objects

10.1.2. Scientific Events Selection

10.1.2.1. Reviewer

- J-P. Merlet has been reviewing Editor for IROS 2017 and was a member of ICRA 2017 IPC.

- The members of the team reviewed numerous papers for numerous international conferences.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- J-P. Merlet is board member of the Journal of Behavorial Robotics

10.1.4. Invited Talks

- J-P. Merlet was invited by the Royal Society of Edinburgh for a talk on robotics

10.1.5. Leadership within the Scientific Community

- J-P. Merlet is Inria representative to the PPP Eurobotics aisbl. He is a member of the IFToMM (International Federation for the Promotion of Mechanism and Machine Science) Technical Committees on History and on Computational Kinematics and has be re-elected as one of the 10 members of IFToMM Executive Council, the board of this federation. He is a member of the scientific committee of the CNRS GDR robotique.

10.1.6. Scientific Expertise

- J-P. Merlet was involved in project evaluations for several foreign funding agencies (Israel, Austria, Finland). He was also appointed as *Nominator* for the Japan's Prize.

10.1.7. Research Administration

- J-P. Merlet is an elected member of the Academic Council of UCA COMUE and member of the Research, Ethical Committees of UCA

- O. Pourtallier is a board member of SeaTech, an Engineering School of University of Toulon.

10.1.7.1. Inria activities

- J-P. Merlet is an elected member of Inria Scientific Committee

- O. Pourtallier is responsible of the NICE committee (long term invited scientists and post-doctoral student selection).

- Y. Papegay is a member of the Inria CUMIR and of the ADT committee

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : O. Pourtallier lectured 6 hours on game theory to Master OSE (M2), at École des Mines de Paris, Sophia Antipolis, France.

10.2.2. Supervision

PhD in Progress : A. Massein, Design of Smart Environment for Human Behaviour Recognition, 2013-2018, supervisors: D.Daney, Y.Papegay

10.2.3. Juries

- J-P. Merlet has been a member of 5 PhD juries
- Y. Papegay has been a member of 1 PhD jury

10.3. Popularization

- J-P. Merlet and A. Coulbois participated to Inorobot and several other events, exhibiting a cable-driven parallel robot for education
- J-P. is a member of the Scientific Committee managing the future permanent exhibition on robotics at the Cité des Sciences, Paris
- Y.Papegay is actively participating to the Math.en.Jeans initiative for Mathematics teaching for undergraduate students.
- Y.Papegay organized and animated summer schools in experimental mathematics and computer sciences. Several one week sessions have been held in Oxford in June, July, August and November gathering more than 70 high-school students - most of them were awardees in Mathematics Olympiads.

<p style="text-align:center;color:red;">LAGADIC Project-Team</p>

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Marie Babel was the Scientific Chair of the workshop "Serious game et réalité virtuelle : de la conception à l'utilisation" organized in Inria Rennes on December 15th 2017.

10.1.1.2. Member of the Organizing Committees

- Marie Babel and Patrick Rives were in the Organizing Committee of JNRR 2017 ("Journées Nationales de la Recherche en Robotique") held in Biarritz in November 2017

- Alexandre Krupa co-organized with Christoph Hennersperger (Technical University of Munich) and Danail Stoyanov (University College London) the Workshop on "Medical Imaging Robotics" at IROS 2017, Vancouver, Canada (http://robotic-imaging.com)

- Claudio Pacchierotti was the Publicity Chair of the 2017 IEEE World Haptics conference held in Münich, Germany. He also co-organized the workshop on "Wearable haptic systems: design, applications, and perspectives," at this conference.

- Paolo Robuffo Giordano was Editor-in-Chief of the IEEE Int. Symposium on Multi-Robot and Multi-Agent Systems (MRS 2017)

10.1.1.3. Chair of Conference Program Committees

- Julien Pettré was Program Chair for the 2017 ACM Motion in Games Conference, Barcelona, 8-10 November 2017

10.1.1.4. Member of the Conference Program Committees

- François Chaumette: ICRA 2018 (Associate Editor)
- Claudio Pacchierotti: WHC 2017 (Associate Editor)
- Julien Pettré: Eurographics 2017, ACM SCA 2017
- Patrick Rives: ICINCO 2017 (Program Committee Membership)
- Paolo Robuffo Giordano: IROS 2018 (Associate Editor), ICRA 2018 (Associate Editor), RSS 2018, ISRR 2017

10.1.1.5. Reviewer

- Marie Babel: ICRA 2017 (1)
- François Chaumette: CDC 2017 (1)
- Vincent Drevelle: IROS 2017 (1)
- Alexandre Krupa: IROS 2017 (1), Surgetica 2017 (1), ICRA 2018 (1)
- Eric Marchand: IROS 2017 (3), ICRA 2018 (2)
- Claudio Pacchierotti: WHC 2017, ICRA 2017, IROS 2017, Haptics 2018, also Senior Reviewer for IEEE Robotics & Automation Society Young Reviewers Program (from 2016)
- Julien Pettré: ACM SIGGRAPH (2), ACM SIGGRAPH Asia 2017 (2), Eurographics 2018 (1), IEEE VR 2018 (1), ACM SCA 2017 (2)
- Patrick Rives: ICRA 2017 (3), CVPR 2017 (2), ICCV 2017, Icinco 2017 (3), IV 2017 (1), PPINV 2017 (3)
- Paolo Robuffo Giordano: ACC 2017 (1), HFR 2017(2), ICRA 2018(2), IROS 2017(2)

- Paolo Salaris: ACC 2017 (1), RSS 2017 (2), IROS 2017 (1)
- Fabien Spindler: IROS 2017 (1)

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- François Chaumette: Editorial Board of the Int. Journal of Robotics Research, Funding Senior Editor of the IEEE Robotics and Automation Letters, Editorial Board of the Springer Tracts in Advanced Robotics, Board Member of the Springer Encyclopedia of Robotics, Senior Editor of the IEEE Trans. on Robotics (from December 2017).
- Alexandre Krupa and Eric Marchand are Associate Editors of the IEEE Robotics and Automation Letters.
- Julien Pettré: Editorial board of Collective Dynamics, Associate Editor for Computer Animation and Virtual Worlds

10.1.2.2. Reviewer - Reviewing Activities

- Marie Babel: IEEE RAL (1), IEEE THMS (1)
- François Chaumette: Journal of Intelligent & Robotics Systems (1), Int. Journal of Robotics Research (1)
- Alexandre Krupa: Int. Journal of Robotics Research (1)
- Eric Marchand: Int. Journal of Robotics Research (1)
- Claudio Pacchierotti: TOH (5), RAL (8), TBME (1), TMECH(1), IJMRCAS(1), Plos One (1)
- Julien Pettré: Plos One (1), Wiley's Computer Animation and Virtual Worlds (1), Current Directions in Psychological Science (1), Elsevier's Computer and Graphics (1), IEEE TVCG (1), Journal of Motor Behavior (1).
- Patrick Rives: IEEE-Robotics and Automation Letters (1)
- Paolo Robuffo Giordano: L-CSS(1), RAL (1), TRO (1), TSMC (1)
- Paolo Salaris: IEEE-Robotics and Automation Letters (1), IEEE Trans. on Control, Systems Technology (1), Int. Journal of Robotics Research (1), Int. Journal of Control, Automation and Systems IJCAS (1)

10.1.3. Invited Talks

- Marie Babel:
    - "Assistance and Service Robotics in a Human Environment Workshop" at IEEE IROS 2017 workshop about "Smart wheelchairs: the tomorrow's vehicles?".
    - "Navigation en milieu humain : comprendre pour mieux assister" at JNRR 2017
- François Chaumette: "Visual servoing with and without image processing", University of Zhejiang, December 2017.
- Vincent Drevelle: "Set-membership interval methods for observation robotics", ENSTA Bretagne, Brest, France, October 2017.
- Eric Marchand: "The dense approach for visual servoing", "Journées scientifiques" Inria, Sophia Antipolis, June 2017.
- Claudio Pacchierotti: "Wearable haptics for VR and AR". Max-Planck Institute for Intelligent Systems, Stuttgart, Germany, 2017.
- Julien Pettré:
    - "Microscopic crowd modeling and simulation: an holistic approach", Univ. Pompeu Fabra (Barcelona), May 2017

- – "Pedestrian Dynamics: Modeling, Validation and Calibration", Brown University ICERM workshop, August 2017
- – "Velocity-based algorithms for crowd simulation", workshop "Piétons et foules", Univ. Orsay, December 2017
- Paolo Robuffo Giordano:
  - – "A New Look at Shared Control for Complex Robotics Systems". Ecole Normale Supérieure (ENS), Rennes, France, December 2017
  - – "Blending Human Assistance and Local Autonomy for Advanced Telemanipulation". Humanoids 2017 Workshop on Towards Robust Grasping And Manipulation Skills For Humanoids, November 2017
  - – "Recent Results on Shared Control for Human- assisted Telemanipulation". IROS 2017 Workshop on Human in-the-loop robotic manipulation: on the influence of the human role, September 2017
  - – "Shared Control Architectures for Single and Multiple Robots". LS2N, Nantes, France, July 2017
  - – "Graph-Theoretical Tools for Sensor-based Multi-Robot Applications". Robolog 2017 workshop, IRISA, France, June 2017
  - – "Collective Control, State Estimation and Human Interaction for Quadrotors in Unstructured Environments". ICRA 2017 Workshop on Human Multi-Robot System Interaction, June 2017
  - – "Recent results in Collective Control, State Estimation and Human Interaction for Quadrotors in Unstructured Environments". Aerial Robotics workshop, Paris, France, March 2017
- Fabien Spindler: "ViSP integration in ROS ecosystem", "Journée technique : retour d'expériences autour de ROS" organized by "Réseau métier des roboticiens et mécatroniciens", Cité Scientifique de l'Université de Lille, August 2017.

10.1.4. Leadership within the Scientific Community

- François Chaumette is a 2016-2019 elected member of the Administrative Committee of the IEEE Robotics and Automation Society. He is also a member of the Scientific Council of the CNRS INS2I and vice-president of the Tremplin-ERC ANR program.
- Claudio Pacchierotti is the Chair of the IEEE Technical Committee on Haptics.
- Philippe Martinet is vice-president of the "GdR Robotique". François Chaumette and Patrick Rives are members of its scientific council.

10.1.5. Scientific Expertise

- Marie Babel served as an expert for the International Mission of the French Research Ministry (MEIRIES).
- François Chaumette served as a Panel member for the ERC PE7 consolidator grants. He also served in the selection committee for a Professor position at UTC (Compiègne). He was also involved in the evaluation of a research proposal submitted to the Research Foundation of Flanders, and for an Associate Prof. position at the City University of Hong Kong.
- Claudio Pacchierotti was a member of the jury for the EuroHaptics Best PhD thesis award, for the Robotics Made in Italy Video Contest, and served for Hans Fischer Senior Fellowship at the Institute for Advanced Study of the Technical University of Munich (TUM-IAS).
- Paolo Robuffo Giordano was reviewer of ERC Starting Grants and Consolidator Grants for the EU, of ANR projects, and of NWO projects (Dutch funding agency).
- Patrick Rives served as member of the "Comité d'Evaluation" of the ANR Challenge "Malin" and of the ANR Challenge "Rose".

10.1.6. Research Administration

- François Chaumette serves as the president of the committee in charge of all the temporary recruitments ("Commission Personnel") at Inria Rennes-Bretagne Atlantique and Irisa. He is also a member of the Head team of Inria Rennes-Bretagne Atlantique.

- Eric Marchand served as secretary in the board of the "Association Française pour la Reconnaissance et l'Interprétation des Formes" (AFRIF). He is also in charge of the Irisa Ph.D. students in the committee in charge of all the temporary recruitments ("Commission Personnel") at Inria Rennes-Bretagne Atlantique and Irisa. He is in the board of the "Pôle Images et Réseaux" and in the board of "Ecole doctorale Matisse".

- Alexandre Krupa is a member of the CUMIR ("Commission des Utilisateurs des Moyens Informatiques pour la Recherche") of Inria Rennes-Bretagne Atlantique.

- Paolo Salaris is member of the "Comité de Suivi Doctoral (CSD)" of Inria Sophia Antipolis.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Marie Babel:

> Master INSA2: "Robotics", 26 hours, M1, INSA Rennes
>
> Master INSA1: "Architecture", 30 hours, L3, INSA Rennes
>
> Master INSA2: "Computer science project", 30 hours, M1, INSA Rennes
>
> Master INSA2: "Image analysis", 18 hours, M1, INSA Rennes
>
> Master INSA1: "Remedial math courses", 50 hours, L3, INSA Rennes

François Chaumette:

> Master ESIR3: "Visual servoing", 8 hours, M2, Ecole supérieure d'ingénieurs de Rennes

Vincent Drevelle:

> Master ESIR2: "Real-time systems and RTOS", 24 hours, M1, Esir Rennes
>
> Master GLA: "Terrain information systems", 14 hours, M2, Université de Rennes 1
>
> Master Info: "Artificial intelligence", 24 hours, M1, Université de Rennes 1
>
> Master Elec: "Connected and geolocalized embedded applications", 24 hours, M2, Université de Rennes 1
>
> Licence Info: "Computer systems architecture", 24 hours, L1, Université de Rennes 1
>
> Licence and Master Elec: "Electronics project",38 hours, L3 and M1, Université de Rennes 1
>
> Portail Info-Elec: "Discovering programming and electronics", 14 hours, L1, Université de Rennes 1
>
> LabFab School Mobility: "Build your robot", 30 hours, DU
>
> Licence Miage: "Computer programming", 78 hours, L3, Université de Rennes 1
>
> Master Elec: "Instrumentation, localization, GPS", 4 hours, M2, Université de Rennes 1
>
> Master Elec: "Data fusion", 20 hours, M2, Université de Rennes 1

Alexandre Krupa:

> Master SIBM (Signals and Images in Biology and Medicine): "Medical robotics guided from images", 4.5 hours, M2, Université de Rennes 1, Brest and Angers
>
> Master FIP TIC-Santé: "Ultrasound visual servoing", 6 hours, M2, Télécom Physique Strasbourg
>
> Master INSA3: "Modeling and engineering for Biology and Health applications", 12 hours, M2, INSA Rennes
>
> Master ESIR3: "Ultrasound visual servoing", 9 hours, M2, Esir Rennes

Eric Marchand:

      Master Esir2: "Colorimetry", 24 hours, M1, Esir Rennes

      Master Esir2: "Computer vision: geometry", 24 hours, M1, Esir Rennes

      Master Esir3: "Special effects", 24 hours, M2, Esir Rennes

      Master Esir3: "Computer vision: tracking and recognition", 24 hours, M2, Esir Rennes

      Master MRI: "Computer vision", 24 hours, M2, Université de Rennes 1

      Master MIA: "Augmented reality", 4 hours, M2, Université de Rennes 1

Julien Pettré:

      INSA1: "Programmation Informatique", 40 hours, INSA Rennes

10.2.2. Supervision

- Ph.D.: Renato José Martins, "Robust navigation and control of an autonomous vehicle", defended in October 2017, supervised by Patrick Rives and Samuel Siqueira Bueno (CTI) [12]

- Ph.D.: Jason Chevrie, "Flexible needle steering using ultrasound visual servoing", defended in December 2017, supervised by Alexandre Krupa and Marie Babel [11]

- Ph.D. in progress: Fabrizio Schiano, "Collective control with onboard sensors for multiple quadrotor UAVs", to be defended in January 2018, supervised by Paolo Robuffo Giordano

- Ph.D. in progress: Pedro Patlan-Rosales, "A robotic control framework for quantitative ultrasound elastography", to be defended in January 2018, supervised by Alexandre Krupa

- Ph.D. in progress: Quentin Bateux, "Visual servoing from global descriptors", started in October 2014, supervised by Eric Marchand

- Ph.D. in progress: Lesley-Ann Duflot, "Visual servoing using shearlet transform", started in November 2014, supervised by Alexandre Krupa and Brahim Tamadazte (Minarob group at FEMTO-ST, Besançon)

- Ph.D. in progress: Firas Abi Farraj, "Shared Control Architectures for Visual Servoing Tasks", started in October 2015, supervised by Paolo Robuffo Giordano

- Ph.D. in progress: Salma Jiddi, "Analyses géométrique et photométrique pour des applications de réalité mixte", started in October 2015, supervised by Eric Marchand and Philippe Robert (Technicolor)

- Ph.D. in progress: Ide Flore Kenmogne Fokam, "Cooperative localization in multi-robot fleets using interval analysis", started in October 2015, supervised Vincent Drevelle and Eric Marchand

- Ph.D. in progress: Bryan Penin "Model predictive visual servoing for UAVS", started in October 2015, supervised by Paolo Robuffo Giordano and François Chaumette

- Ph.D. in progress: Guillaume Cortes, "Motion Capture", started in October 2015, supervised Eric Marchand and Anatole Lécuyer (Hybrid group).

- Ph.D. in progress: Muhammad Usman, "Robust Vision-Based Navigation for Quadrotor UAVs", started in October 2015, supervised by Paolo Robuffo Giordano

- Ph.D. in progress: Louise Devigne, "Contribution d'une aide technique robotique à l'évaluation de pathologies neurologiques : Application à la navigation d'un fauteuil roulant", started in November 2015, supervised by Marie Babel and Philippe Gallien (Pôle Saint Hélier)

- Ph.D. in progress: Quentin Delamare, "Algorithmes d'estimation et de commande pour des quadrirotors en interaction physique avec l'environnement", started in September 2016, supervised by Paolo Robuffo Giordano and Antonio Franchi (LAAS)

- Ph.D. in progress: Axel Lopez Gandia, "Data assimilation for synthetic vision-based crowd simulation algorithms", started in October 2016, supervised by Julien Pettré and François Chaumette

- Ph.D. in progress: Aline Baudry, "Contribution à la modélisation des fauteuils roulants pour l'amélioration de leur navigation en mode semi-autonome", started in October 2016, supervised by Marie Babel and Sylvain Guégan (Mechanical Engineering Dpt/LGCGM at Insa Rennes)

- Ph.D. in progress: Hadrien Gurnel, "Shared control of a biopsy needle from haptic and ultrasound visual feedback", started in October 2016, supervised by Alexandre Krupa, Maud Marchal (Hybrid group at Inria Rennes-Bretagne Atlantique and Irisa) and Laurent Launay (IRT b<>com)

- Ph.D. in progress: Dayana Hassan, "Plate-forme robotisée d'assistance aux personnes à mobilité réduite", started in November 2016, supervised by Paolo Salaris, Patrick Rives, and Frank Anjeaux (Axyn robotique)

- Ph.D. in progress: Agniva Sengupta, "Localization and characterization of objects with unknown shapes", started in January 2017, supervised by Alexandre Krupa and Eric Marchand

- Ph.D. in progress: Xavier De Tinguy de la Giroulière, "Conception de techniques d'interaction multi-sensorielles pour la manipulation dextre d'objets en réalité virtuelle", started in September 2017, supervised by Maud Marchal, Anatole Lécuyer (Hybrid group) and Claudio Pacchierotti

- Ph.D. in progress: Rahaf Rahal, "Mixed tactile-force feedback for safe and intuitive robotic teleoperation", started in October 2017, supervised by Paolo Robuffo Giordano and Claudio Pacchierotti

- Ph.D. in progress: Nicolas Le Borgne, "Contrôle partagé et navigation assistée d'un fauteuil roulant en extérieur", started in October 2017, supervised by Marie Babel

- Ph.D. in progress: Florian Berton, "Design of a virtual reality platform for studying immersion and behaviours in aggressive crowds", started in November 2017, supervised by Julien Pettré

10.2.3. External Ph.D. and HdR Juries

- François Chaumette: Abed Malti (HdR, reviewer, Tlecem University, Algeria), Guillaume Laurent (HdR, reviewer, Femto ST, Besançon), Sylvain Lanneau (Ph.D., member, LS2N, Nantes)

- Eric Marchand: Angélique Loesch (Ph.D., reviewer, Univ. Clermont Auvergne, CEA), Pierre Rolin (Ph.D., reviewer, Univ. de Nancy), Hristina Hristova (Ph.D., president, Univ. de Rennes 1)

- Paolo Robuffo Giordano: Alexandre Boeuf (Ph.D., reviewer, LAAS, Toulouse), Valerio Modugno (Ph.D., reviewer, University of Rome La Sapienza, Italy), Mohamed Sorour (Ph.D., reviewer, LIRMM, Montpellier)

10.3. Popularization

- Due to the visibility of our experimental platforms, the team is often requested to present its research activities to students, researchers or industry. Our panel of demonstrations allows us to highlight recent results concerning the positioning of an ultrasound probe by visual servoing, grasping and dual arm manipulation by Romeo, vision-based shared control using our haptic device for object manipulation, the control of a fleet of quadrotors, vision-based detection and tracking for space navigation in a rendezvous context, the semi-autonomous navigation of a wheelchair, and augmented reality applications. Some of these demonstrations are available as videos on VispTeam YouTube channel (https://www.youtube.com/user/VispTeam/videos). This year there were among others, demonstrations organized for the new year's lab greetings, for the Inria industry journey focused on data and applications in Paris, for the "Semaine de l'Informatique Graphique et de la Réalité virtuelle", and for the Science and music journey.

- Marie Babel participated as a member in a panel discussion during the Digital Tech Conference organized in Rennes in December 2017.

- Julien Pettré wrote a vulgarization paper [68], explaining how crowd simulation is used in the field of visual effects for the movie and the video-game industries. The crowd simulation topic was presented during the "Pint of Science FR 2017" event, which organizes mini conferences animated by researchers in public places such as cafes and bars.

STARS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

François Brémond was a member of the Management Committee and COST Action IC1307 in 2017.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

François Brémond was an Area and Session Chair of AVSS - 14th IEEE International Conference on Advanced Video and Signal-Based Surveillance, Lecce, Italy, August 29th - September 1st, 2017.

François Brémond was an Area Chair of ICIAP - 19th International Conference on Image Analysis and Processing; Area Chair; in Catania, Italy, September 11-15, 2017.

Antitza Dantcheva was program and session chair at the 17th International Conference of the Biometrics Special Interest Group, BIOSIG 2017

10.1.2.2. Member of the Conference Program Committees

François Brémond was program committee member of the conferences and workshops: IWT4S 2017, COMSI17, SP-CROWD 2017, ICPRS-17, ICDP2017, AVSS17 and WACV17-18.

Antitza Dantcheva was program committee member of the conference International Conference on Biometrics (IJCB 2017).

Jean-Paul Rigault is a member of the *Association Internationale pour les Technologies à Objets* (AITO) which organizes international conferences such as ECOOP.

10.1.2.3. Reviewer

François Brémond was reviewer for the conferences : CVPR2017-18, ICCV2017, VISION4HCI17, WACV 2017, SAV17, ICVS 17, ISG 18, BER17, BMVC17, IROS17.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- François Brémond was handling editor of the international journal "Machine Vision and Application".

10.1.3.2. Reviewer - Reviewing Activities

François Brémond was reviewer for IEEE Transactions on Circuits and Systems for Video Technology Editorial Office.

Monique Thonnat is a reviewer for the journals Artificial Intelligence in Medicine AIIM (Elsevier) and The Computer Journal (Oxford University Press).

Antitza Dantcheva reviewed for journals including IEEE Transactions on Information Forensics and Security (TIFS), The Visual Computer, Entropy, Pattern Recognition Letters.

10.1.4. Invited Talks

François Brémond was invited by Huawei Research, within Video Intelligence Event, on People Re-ID, Dublin, 21st November 2017.

Antitza Dantcheva:"Personalized facial expression and activity recognition during mnemotherapy-sessions for patients with major neurocognitive disorders", IBME, University of Oxford, UK, November 2017

Antitza Dantcheva: "New Advances in Soft Biometrics", Biometrics Congress, London, UK, November 2017

Antitza Dantcheva: "Can a smile reveal your gender?", Day of Biometrics, Caen, France, July 2017

Alexandra Koenig was invited by Dr. Dimitrios Kokkinakis to give a talk on ICT for monitoring dementia patients and in particuler Automatic Speech analysis for the assessment of cognitive impairment, University of Gothenburg, Sweden, 18 September 2017.

Alexandra Koening was invited by Dr Jessica Peter to give a talk on Automatic Analysis of the Semantic Verbal Fluency performance in elderly people, University of Bern, Swiss, 18 October 2017.

10.1.5. Leadership within the Scientific Community

Monique Thonnat is President of the University Hospital Institute IHU Liryc in Bordeaux on cardiac electrical disorders since 2015.

Antitza Dantcheva serves in the Technical Activities Committee of the IEEE Biometrics Council 2017.

10.1.6. Scientific Expertise

François Brémond was expert for a research program at the Campus for Research Excellence and Technological Enterprise (CREATE) from the National University of Singapore (NUS).

François Brémond was expert for the European CHIST-ERA ERA-NET Call 2016, for the project "SUPER CARE".

François Brémond was expert for the project call "Recherche - Enseignement Supérieur - Plate-formes Mutualisées" de la Région Nouvelle-Aquitaine, March 2017.

François Brémond was expert for the "Revue Retraite et société", April 2017.

Monique Thonnat was an expert to review COFECUB research project (Scientific cooperation between Brasil and France) for the French government.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Annie Ressouche, Safety in Middleware for Internet of Things, 6h, niveau (M2), Polytech Nice School of Nice University.

Master : Inès Sarray, Safety in Middleware for Internet of Things, 6h, niveau (M2), Polytech Nice School of Nice University.

10.2.2. Supervision

PhD: Minh Khue Phan Tran, Maintaining the engagement of older adults with dementia while interacting with serious game, Cote d'Azur University, 20th of April, François Brémond.

PhD: Michal Koperski, Detecting critical human activities using RGB/RGBD cameras in home environment, François Brémond.

PhD: Auriane Gros, Evaluation and Specific Management of Emotional Disturbances with Activity Recognition Systems for Alzheimer patient, 4th of December, François Brémond.

PhD in progress : Thi Lan Anh Nguyen, Complex Activity Recognition from 3D sensors, Dec 2014, François Brémond.

PhD in progress: Ines Sarray, Activity Recognition System Design, Oct 2015, Sabine Moisan.

PhD in progress: Farhood Negin, People Detection for Activity Recognition using RGB-Depth Sensors, Jan 2015, François Brémond.

PhD in progress: Ujjwal Ujjwal, Pedestrian Detection to Dynamically Populate the Map of a Crossroad, Sep 2016, François Brémond.

PhD in progress: Srijan Das, Activity Recognition in videos by combining an ontology based language with CNN networks, Dec 2017, François Brémond.

10.2.3. Juries

François Brémond was jury member of Tenure Track Selection: committee member for permanent position, Mines School - ParisTech, September 2017

François Brémond was jury member of the mid-term review for 4 PhDs - UNED Doctoral Consortium, Mr. Artaso, Mr. Timón, Mr. Pérez, and Mr. Navares, Facultad de Informática, UNED, Madrid, 12 June 2017

François Brémond was jury member of the following PhD theses:

> PhD, Andrews Sobral, Université La Rochelle, 11 mai 2017.

> PhD, Athira Muraleedharan Nambiar, Electrical and Computer Engineering, Instituto Superior Técnico, Institute for Systems and Robotics, Lisboa, Portugal, 1st September 2017.

> PhD, Enjie Ghorbel, Université de Rouen Normandie, 12 octobre 2017.

> PhD, Bassem HadjKacem, École Nationale d'Ingénieurs de Sfax, Tunisie, 5 novembre 2017.

> PhD, Nabila Mansouri, Université de Sfax et l'Université de Valenciennes, 20 novembre 2017.

Monique Thonnat was member of the final selection board (jury d'admission) of junior (CR) and senior (DR) research scientists of (Cérema, ENPC, ENTPE, IFSTTAR, IGN, Météo-France).

Monique Thonnat is the research representative of Ecole Polytechnique jury for delivering the Prize of best student scientific projects since June 2011.

Monique Thonnat is member of the scientific board of ENPC, Ecole Nationale des Ponts et Chaussees since June 2008.

Sabine Moisan was reviewer in the PhD jury of Hassan Loulou, ESTACA, Paris nov. 2017

TITANE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

Pierre Alliez: ACM SIGGRAPH, EUROGRAPHICS, EUROGRAPHICS Star reports, EUROGRAPHICS Symposium on Geometry Processing, EG Workshop on Graphics and Cultural Heritage. He was an advisory board member for EUROGRAPHICS 2018 and chaired the EUROGRAPHICS 2017 Günter Enderle Award Committee.

Yuliya Tarabalka: IDAACS international conference.

10.1.1.2. Reviewer

- Yuliya Tarabalka was a reviewer for the journals IEEE PAMI, IEEE TIP, IEEE JSTARS, Remote Sensing.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Pierre Alliez is an associate editor of Computer-Aided Geometric Design and Graphical Models. He stepped down from ACM Transactions on Graphics in 2017. He is also a member of the editorial board of the CGAL open source project.

Florent Lafarge is an associate editor of The Visual Computer since 2015.

Yuliya Tarabalka is an associate editor for the Springer journal Sensing and Imaging and the International Journal of Computing since 2017.

10.1.2.2. Reviewer - Reviewing Activities

- Yuliya Tarabalka was a reviewer for the IEEE IGARSS conference (student competition selection committee).

10.1.3. Invited Talks

Florent Lafarge gave an invited talk at the Brazilian Symposium on Remote Sensing (SBSR 2017) at Santos, Brazil.

Yuliya Tarabalka gave an invited talk at the Brazilian Congress of Cartography at Rio de Janeiro, Brazil, and a tutorial on machine learning at IGARSS conference in Fort Worth, USA.

Pierre Alliez gave an invited seminar at collège de France (Géométrie algorithmique: Données, Modèles, Programmes).

10.1.4. Leadership within the Scientific Community

Pierre Alliez is a member of the Steering Committees of the EUROGRAPHICS Symposium on Geometry Processing and of the EUROGRAPHICS Workshop on Graphics and Cultural Heritage. He was also elected Executive Board Member for the Solid Modeling Association, for 4 years.

10.1.5. Scientific Expertise

Pierre Alliez reviewed two H2020 projects for the European commission. He was also a reviewer for the Belgium Fund for Scientific Research (FNRS).

Yuliya Tarabalka was an expert evaluator for Kazakhstan national research funding foundation, and she is a member of the expert panel SBWT (signal processing) of the FWO (Belgian research funding foundation) since November 2016.

10.1.6. Research Administration

Pierre Alliez: member of the BCP (bureau du CP) since 2015, comité MASTIC (popularization), and comité espace immersif.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Pierre Alliez and Florent Lafarge, Ingeniérie 3D, 21h, M2, university Nice Sophia Antipolis, France.

Master: Pierre Alliez and Florent Lafarge, 3D Meshes and Applications, 32h, M2, Ecole des Ponts ParisTech, France.

Master: Florent Lafarge, Traitement d'images numériques, 6h, M2, university Nice Sophia Antipolis, France.

Master: Pierre Alliez and Florent Lafarge, Mathématiques pour la géométrie, 30h, M1, EFREI, France.

Master: Pierre Alliez and Florent Lafarge, Curves and surfaces, 60h, M1, university Nice Sophia Antipolis, France.

Master: Pierre Alliez, Geometric modeling and processing, 15h, M2, Telecom SudParis, France.

Master: Yuliya Tarabalka, Discrete inference and learning, 12h, M2 MVA, ENS Paris-Saclay & CentraleSupelec, France.

Master: Yuliya Tarabalka, Mathematical methods,25h, MSc in data sciences and business analytics ESSEC-CS, CentraleSupelec, France.

Licence: Yuliya Tarabalka, Discrete optimization, 18h, L2, CentraleSupelec, France.

Licence: Yuliya Tarabalka, Advanced algorithms, 28.5h, L2 Networks and Telecoms, IUT Nice Côte d'Azur, France.

10.2.2. Supervision

PhD defended April 21st: Dorothy Duan, Semantized Elevation Maps, since October 2013, Florent Lafarge.

PhD defended June 22nd: Emmanuel Maggiori, Learning Approaches for Large-Scale Remote Sensing Image Classification, since January 2015, Yuliya Tarabalka and Pierre Alliez.

PhD in progress: Jean-Dominique Favreau, Sketch-based modeling in multi-view context, since October 2014, Florent Lafarge and Adrien Bousseau.

PhD in progress: Hao Fang, Scale-space understanding in urban scenes, since March 2016, Florent Lafarge.

PhD in progress: Jean-Philippe Bauchet, City modelling from high resolution satellite images, since October 2016, Florent Lafarge.

PhD in progress: Lionel Matteo: From Pleiades images to very high resolution topography in complex zones, since September 2017, Yuliya Tarabalka and Isabelle Manighetti.

PhD in progress: Onur Tasar, Using deep learning approaches to devise an efficient representation for large-scale satellite images, since October 2017, Yuliya Tarabalka and Pierre Alliez.

PhD in progress: Nicolas Girard, How to structure satellite data, since November 2017, Yuliya Tarabalka.

10.2.3. Juries

Pierre Alliez:

- Thesis reviewer: Giorgio Marcias (CNR Pisa, Italy).
- Thesis reviewer: Claudio Calabrese (University Roma, Italy).
- Thesis reviewer: Florian Caillaud (LIRIS Lyon).
- Thesis reviewer: Dmitry Anisimov (University Lugano).
- Thesis reviewer: Yannick Masson (University Paris Est).
- Thesis reviewer: Ana Vintescu (Telecom ParisTech).
- HDR committee president: Maks Ovsjanikov (Ecole Polytechnique).

Florent Lafarge:

- Thesis reviewer: Andras Bodis-Szomoru (ETH Zurich).
- Thesis examiner: Renato Martins (University Mines ParisTech).
- Thesis examiner:Rodrigo Ortiz Cayon (University Nice Sophia Antipolis).

Yuliya Tarabalka:

- Thesis examiner: Amine Bohi (University of Toulon).

10.3. Popularization

Pierre Alliez gave two seminars at CIV (olympic internship in mathematics) and for the national olympiads in geosciences (IESO).

WIMMICS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Michel Buffa was co-responsible of the W3CX WebDev contest at Perth's Festival of the Web Standardization, W3C track at WWW 2017.

Catherine Faron Zucker:

- co-chair of the ESWC2017 workshop on Semantic Web for Scientific Heritage (SW4SH 2017),
- co-chair of the 2nd scientific day of the Inria Learning Lab, Rennes, 10/02/2017, Rennes
- co-chair of the AFIA Industry Forum for Artificial Intelligence (FIIA2017) on Knowledge management, 27/04/2017, Paris
- co-chair of the AFIA day Opportunities and Challenges of Artificial Intelligence (PDIA2017) on AI algorithms and tools, 06/10/2017, Paris

Fabien Gandon:

- General Chair EGC 2017
- Co-chair Workshop LDDL linked data and distributed ledgers (blockchain)
- PhD Symposium co-chair at ISWC 2017

Serena Villata was general chair, together with Leendert van der Torre, of the 20th International Conference on Principle and Practice of Multi-Agent Systems PRIMA, Nice, France, November.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

Catherine Faron Zucker: Research and Innovation co-chair of the 13th Int. Conference on Semantic Systems (Semantics 2017).

10.1.2.2. Member of the Conference Program Committees

Michel Buffa: WebAudio conference 2017

Elena Cabrio: Association for Computational Linguistics conference (ACL), Empirical Methods in Natural Language Processing (EMNLP), Extended Semantic Web Conference (ESWC), International Semantic Web Conference, Thirty-First AAAI Conference on Artificial Intelligence (AAAI-17) .

Olivier Corby: International Semantic Web Conference (ISWC), Extended Semantic Web Conference (ESWC), Querying the Web of Data workshop at ESWC (QuWeDa), Conférence de Recherche en Informatique (CRI), GraphQ: 6th International Workshop on Querying Graph Structured Data, Journées Francophones d'Ingénierie des Connaissances (IC), GKR workshop at IJCAI, Symposium sur l'Ingénierie de l'Information Médicale (SIIM).

Catherine Faron Zucker: WWW 2018 (The Web Conference), ICCS 2018 (Int. Conference on Conceptual Structures), IJCAI (Int. Joint Conference on Artificial Intelligence), PRIMA (Int. Conference on Principles and Practice of Multi-Agent Systems), WebSci (ACM Web Science conference), ESWC (European Semantic Web Conference), ISWC (Int. Semantic Web Conference), GKR@IJCAI (Int. Workshop on Graph Structures for Knowledge Representation and Reasoning), IC (Ingénierie des Connaissances), EGC 2018 (Extraction et Gestion des Connaissances), EIAH (Environnements Informatiques pour l'Apprentissage Humain), CNRIA (Colloque National (sénégalais) sur la Recherche en Informatique et ses Applications).

Fabien Gandon: SemWebPro, Senior PC ISWC, Senior PC IJCAI, ESWC, IC, WebScience, WI.

Alain Giboin: ISWC, VOILA Workshop (at ISWC), IC .

Roque López: Applied Natural Language Processing (ANLP, track of SIMBig).

Isabelle Mirbel: International Conference on Advanced Information Systems Engineering (CAISE), IEEE International Conference on Research Challenges in Information Science (RCIS), INFormatique des ORganisations et Systèmes d'Information et de Décision (INFORSID), Toulouse, France, Second International Workshop on Semantic Web for Cultural Heritage (SW4CH).

Oscar Rodríguez Rocha: KEOD, KSE , Semantics.

Andrea Tettamanzi: ECG 2018, EvoApplications 2017, GECCO 2017, IC 2017, ISWC 2017, LREC 2018, SAC 2018, Web Intelligence 2017, and WWW 2018 SW4SH workshop at ESWC 2017.

Serena Villata: IJCAI, AAAI, AAMAS, JURIX, ICAIL.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Catherine Faron Zucker: Revue d'Intelligence Artificielle.

Fabien Gandon Editor of a special issue SWJ journal for best papers of ESWC 2015 and co-author of its introduction [65]

Isabelle Mirbel: Ingénierie des Systèmes d'Information (Hermès).

Serena Villata: Artificial Intelligence & Law.

10.1.3.2. Reviewer - Reviewing Activities

Elena Cabrio: Journal of Web Semantics, the Computational Linguistics journal, Argument and Computation.

Catherine Faron Zucker: IEEE's Transactions on Learning Technologies (TLT), International Journal of Medical Informatics (IJMI), internationale Traitement Automatique des Langues (TAL), revue Sciences et Technologies de l'Information et de la Communication pour l'Éducation et la Formation (STICEF), Revue d'Intelligence Artificielle (RIA).

Alain Giboin: International Journal of Human-Computer Studies, Journal of Web Semantics.

Andrea Tettamanzi : International Journal of Approximate Reasoning, Semantic Web Journal, IEEE Transactions on Fuzzy Systems, Computers, Environment and Urban Systems.

Serena Villata: Journal of Logic and Computation, Argument & Computation, Artificial Intelligence Journal.

10.1.4. Invited Talks

Michel Buffa, "Visites de musées à distance par un robot autonome intelligent" SemWeb Pro conference, Paris, France.

Elena Cabrio was invited speaker of the 12th International Conference on Computational Semantics (IWCS), 19-22 September, Montpellier, France.

Olivier Corby:

- "Best Practice & Design Pattern for the Semantic Web", JDEV, Marseille, July 5th.
- "A Transformation Language for the Web of Data", Data Sciences workshop, ENIT, Tunis, September 13th.
- "Semantic Web Languages and Tools", Journée *Perspectives et défis de l'Intelligence Artificielle*, AFIA, Paris, October 6th.

Fabien Gandon

- Keynote Cognitum workshop IJCAI 2017, talk on Bridging social semantics and formal semantics on the Web August 20th,

http://cognitum.ws/2017/07/01/cognitum-2017-programproceedings/

- Keynote at summer academy of the German National Scholarship foundation Semantic Web & Linked data and Wimmics research, September 25th,
- Invited talk at Boston Consulting group Data Analytics evening on Semantic Web ad Linked data and Wimmics research, February 21st,
- Keynote for Data Science day EDF, on Semantic Web & Linked data and Wimmics research, November 17th,
- Talk at Mediametrie, Semantic Web & Linked data and Wimmics research, December 1st,
- Invited keynote Luxembourg Institute of Science and Technology (LIST) Semantic Web & Linked data and Wimmics research, December 12th.
- Talk at EDHEC Nice MBA Data Analytics Club about Semantic Web, Semantic Web & Linked data and Wimmics research.

Alain Giboin:

"How to use and teach heuristics for evaluating HCI applications" in the workshop "Enseignement de l'IHM : enjeux et solutions pour les enseignants en IUT, écoles et universités" at IHM'17.

Emilie Palagi:

"Design of a User-Centered Evaluation Method for Exploratory Search Engines", Labex UCN@Sophia Scientific Day, November 28th.

Andrea Tattamanzi:

- Invited talk on "Possibilistic Test of OWL Axioms under the Open-World Assumption" at the WASPIQ Workshop in Arras, June 27th.
- Conference on "Unsupervised Learning" at Amadeus, Sophia Antipolis, November 8th.

10.1.5. Scientific Expertise

Michel Buffa is member of the WebAudio W3C Working Group and UNS academic representative at W3C.

Catherine Faron Zucker is the scientific referent of the Inria Learning Lab.

Catherine Faron Zucker was leading the working group in charge of drafting the scientific challenge on Digital Science for Education for the upcoming Inria strategic plan (2018-2022).

Catherine Faron Zucker participated to one of the working groups in charge of drafting the national strategic plan on Artificial intelligence, France IA.

Catherine Faron Zucker reviewed project proposals for the Academic Research Community (ARC) 6 of Auvergne Rhône Alpes region.

10.1.6. Research Administration

Olivier Corby is member of the scientific board of Université Côte d'Azur RISE academy (Network, Information, Digital Society).

Catherine Faron Zucker is General Treasurer of the French Society for Artificial Intelligence (AFIA).

Catherine Faron Zucker is leading the steering committee of the AFIA college on Knowledge Engineering.

Catherine Faron Zucker was member of the 2017 recruitment committees of Ecole des Mines de Saint Etienne, Université de Lorraine (Nancy), Université Paul Valery (Montpellier).

Fabien Gandon:

- director of the joint research laboratory QWANT-Inria
- supervising the convention between the Ministry of Culture and Inria
- representative of Inria at W3C consortium
- representative of Inria in the Web Science Trust Network
- member of the Steering Committee of the Scientific Board of Inria Sophia Antipolis (Bureau CP)
- member of ESWC Steering committee
- member of IW3C2 Steering committee for WWW conference series

Alain Giboin: is member of the scientific committee of the IDEX Jedi Academy 5 "Homme, Idées et Milieux". is co-facilitator of the Idex Jedi Academy 5 initiative "Humanités numériques" (with Arnaud Zucker, CEPAM, and Damon Mayaffre, BCL), is member of the scientific committee of MSHS Axis 2 "TIC, Usages et Communautés". Is co-facilitator of the initiative "Artefacts et Coordination" of MSHS Axis 2 and served as scientific correspondent for Inria Sophia of COERLE (Inria Comité Opérationnel d'Evaluation des Risques Légaux et Ethiques), in tandem with the legal correspondent Nadège Camelio-Laurent.

10.1.7. Seminar Organization

"Les lundis de l'ergonomie" is a cycle of seminars on Human Computer Interaction (HCI) and UX Design organized by Emilie Palagi and Louise Chaussade. This multidisciplinary series of talks attract academic and professional profiles but also anyone interested in social science's approach to digital matters. This year, presentations took place with Laureline Améaume, Manuel Boutet and Naji Bouchiba. The slides and some video records are available on line [0].

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Teaching Responsabilities

Michel Buffa is Director of MIAGE department (Informatics for Business) at UNS.

Catherine Faron Zucker coordinates the Web option of the 5th year of Polytech Nice Sophia engineering school and is in charge of continuous training for the computer science department of Polytech Nice Sophia Antipolis.

Isabelle Mirbel is Vice-dean of Science Department at University of Nice-Sophia Antipolis (UNS).

Andrea Tettamanzi manages the 3nd year of the *Licence* (Bachelor of Science) in Business Informatics (MIAGE) at the UFR Science of the University of Nice-Sophia Antipolis (UNS).

Teaching

Licence: Andrea Tettamanzi, Algorithmics – Object Oriented Programming – Python, 50h, L2, UNS, France.

Licence: Andrea Tettamanzi, Advanced Web Programming (client side), 39h, L2, UNS, France.

Licence: Andrea Tettamanzi, Web, 18 h ETD, L3, UNS, France.

License: Elena Cabrio, Web Server Programming, 45h, L1 INFO, UNS, France.

License: Elena Cabrio, Introduction to the Web, 48h, L1 INFO, UNS, France.

License: Elena Cabrio, Introduction to the Web, 40h, L2 MASS, UNS, France.

License: Elena Cabrio, Internship supervision, 6h, L3 MIAGE, UNS, France.

Licence: Geraud Fokou Pelap, Object Oriented Programming (Java), 45h, L3, MIAGE, UNS, France.

Licence : Isabelle Mirbel, Web programming (Persistency). 54h, L3, UNS, France.

Licence: Michel Buffa, JavaScript, 40h, L3 Miage, UNS, France.

Master: Michel Buffa, Technologies Web, 30h, M1 Miage, UNS, France.

Master: Michel Buffa, Server Side JavaScript & Front-end Frameworks, 30h, M2 Miage NTDP & MBDS, UNS, France.

Master: Michel Buffa, Programmable Web Front-end, 30h, M2 Polytech, UNS, France.

Master: Elena Cabrio, Web Science, 10h, M2 IFI, UNS, France.

Master: Elena Cabrio, Knowledge Engineering, 5h, M1 IFI, UNS, France.

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[0] https://lundisergo.hypotheses.org/

Master: Olivier Corby, Oscar Rodríguez Rocha, Catherine Faron Zucker, Fabien Gandon, Semantic Web of Data, 45h, M2, UNS, France.

Master: Olivier Corby, XML, 20h, M2 IMAFA, UNS, France.

Master: Olivier Corby, Semantic Web, 3H, M2, University of Montpellier, France.

Master: Olivier Corby, Semantic Web, 18H, M2, ENSI, Tunis, Tunisia.

Master: Catherine Faron Zucker, Web languages, 42h, M1, Polytech UNS.

Master: Catherine Faron Zucker, Knowledge Engineering, 9h, M2 IFI, Polytech, UNS.

Master: Fabien Gandon, Semantic Web, 28h, M2, Data Science Technical Institute

Master: Fabien Gandon, Web Science, 3h, M1, UNS, France.

Master: Alain Giboin, Human-Computer-Interaction Design and Evaluation, 54h, M2, UNS.

Master: Alain Giboin, Interaction Techniques and Multimodality, 8h, M2, UNS.

Master: Alain Giboin, Task and Activity Analysis for HCI design and evaluation, 6h, M2 Sociology and Ergonomics of Digital Technologies, UNS.

Master: Alain Giboin, HCI Design and Evaluation, 10h, M2 Sociology and Ergonomics of Digital Technologies, UNS.

Master : Alain Giboin, Economics and ICT: Ergonomics, 6h, M2 Economics and ICT, ISEM, UNS.

Master : Isabelle Mirbel, Project Management, 24h, M2, UNS, France.

Master : Isabelle Mirbel, Requirement Engineering, 42h, M1, UNS, France.

Master : Isabelle Mirbel, Advanced Databases. 48h, M1, UNS, France.

Master: Andrea Tettamanzi, Distributed Systems, 18h, M1, UNS, France.

Master: Andrea Tettamanzi, Parallelism, 18h, M1, UNS, France.

Master: Andrea Tettamanzi, Web Science, 5h, M1, UNS, France.

Master: Andrea Tettamanzi, Fuzzy Description Logics, 5h, M2, UNS, France.

Master: Andrea Tettamanzi, Ontology Learning, 5h, M2, UNS, France.

Master: Andrea Tettamanzi, Data Analysis in Distributed Environment, 18h, M2, UNS, France.

Master: Molka Dhouib, Knowledge Engineering, 2h, M2, UNS, France

Master: Oscar Rodríguez Rocha, Knowledge Engineering, 18h, M2, UNS, France.

E-learning MOOC

Michel Buffa, "JavaScript Intro", June on EDx (MIT/Harvard).

Michel Buffa, "HTML5 Coding Essentials and Best Practices" on EDx.

Michel Buffa, "HTML5 Apps and Games" on Edx.

More than 400.000 subscriptions since 2015 on these three MOOCs.

Fabien Gandon, Olivier Corby & Catherine Faron Zucker, Introduction au Web Sémantique, 2 x 7 weeks, https://www.fun-mooc.fr/, Inria, France Université Numérique, Education for Adults, 4870 registered.

Fabien Gandon, Olivier Corby & Catherine Faron Zucker, Introduction to a Web of Linked Data, 2 x 4 weeks, https://www.fun-mooc.fr/, Inria, France Université Numérique, Education for Adults, 1703 registered.

Tutorial, Summer School

Elena Cabrio & Serena Villata: Argument Mining course at the 29th European Summer School in Logic, Language, and Information (ESSLLI 2017). University of Toulouse, France, July 17-28.

Olivier Corby: RDF & SPARQL at EGC, Grenoble, France, January 24th.

Olivier Corby: STTL: A Transformation Language for the Web of Data, JDEV, Marseille, July 5th.

Fabien Gandon: Introduction to Linked data and semantic Web, Grenoble, France, January 24th.

Fabien Gandon: Linked data and semantic Web, Winter school Complex Network, Inria UNS, France

10.2.2. Supervision

HdR : **Catherine Faron Zucker**, *Knowledge Modelling and Processing for the Social Semantic Web*, UNS, June 12th.

PhD: **Amel Ben Othmane**, *CARS - Un système multi-agent pour l'aide à la décision dans des applications spatio-temporelles incertaines*, UNS, Nhan Le Thanh, Serena Villata and Andrea Tettamanzi, October 12th.

PhD: **Amosse Edouard**, *Détection et Analyse d'Evénement dans les Messages Courts sur Twitter*, UNS, Nhan Le Thanh and Elena Cabrio, September 25th.

PhD: **Franck Michel**, *Heterogeneous Databases Federation in Distributed Environment*, UNS, Johan Montagnat, Catherine Faron Zucker, March 3rd.

PhD: **Tuan Anh Pham**, *Study and integration of the mechanism of workflow control in MVC (Model View Controler) architecture: design and implementation of an APM (Activity Process Management) platform for dynamic information systems on the networks*, UNS, Nhan Le Thanh, September 22nd.

PhD in progress: **Molka Dhouib**, *Modeling of a social network of service providers and companies – recommendation of service providers by reasoning on the social network*, UNS, Catherine Faron Zucker with Andrea Tettamanzi.

PhD in progress: **Tran Duc Minh**, *Learning Ontologies from Linked Open Data*, Andrea Tettamanzi, UNS and Nguyen Thanh Binh, University of Danang.

PhD in progress: **Ahmed El Amine Djebri**, *Distributed Artificial Intelligence for Linked Reviewable Data Management on the Semantic Web*, UNS, Andrea Tettamanzi.

PhD in progress: **Michael Fell**, *Natural Language Processing of Song Lyrics*, UNS, Elena Cabrio, Fabien Gandon.

PhD in progress: **Raphaël Gazzotti**, *Conversational Agent Assistant Endowed with Natural Language and Intuition*, UNS & SynchroNext, Fabien Gandon, Catherine Faron Zucker.

PhD in progress: **Tobias Mayer**, *Argument Mining for Clinical Trials*, UNS, Johan Montagnat (CNRS, I3S), Serena Villata and Céline Poudat (UNS).

PhD in progress: **Thu Huong Nguyen**, *Mining the Semantic Web for OWL Axioms*, Andrea Tettamanzi, UNS.

PhD in progress: **Emilie Palagi**, *Design of a Model-based Method for Evaluating Exploratory Search Systems*, UNS, Labex UCN@Sophia, Alain Giboin, Fabien Gandon with Raphaël Troncy (Eurecom).

PhD in progress: **Mahamadou Toure**, *Mobile Access for the Web of Data*, Fabien Gandon, Pascal Molli and Moussa Lo, UGB, UNS.

10.2.3. Juries

Catherine Faron Zucker:

- reviewer of Pauline Folz's PhD thesis, entitled *Collaboration dans une fédération de consommateurs de données liées*, defended on October 12 at Université de Nantes;

- reviewer of Hamadache's PhD thesis, entitled *Analyse et recherche dans les réseaux sociaux : vers la caractérisation et l'identification significative d'une identité de structure noyau possible au sein d'un processus évolutionnaire décrivant la dynamique d'un réseau social*, defended on July 16th at Université d'Annaba, Algérie;

- jury member of Olivier Wang's PhD thesis, entitled *Analytics Learning for Rule-Based Systems*, defended on June 28 at Ecole Polytechnique, Paris-Saclay.

Fabien Gandon:

- President of the Ph.D. jury of Franck Michel on "Integrating Heterogeneous Data Sources In The Web Of Data", University Côte d'Azur 03/03/2017
- Reviewer HDR Hala Skaf Molli on "Decentralized Data Management for the Semantic Web", l'Université de Nantes, 6/9/2017
- President of the HDR Catherine Faron-Zucker on "", University Côte d'Azur, 12/06/2017
- Reviewer HDR of Pierre-Antoine Champin on "Empowering Ambivalence Supporting multiple interpretations in knowledge-based systems", Université Claude Bernard Lyon 1, 13/06/2017
- Reviewer for PhD of Iacopo Vagliano on "Content Recommendation Through Linked Data", Politecnico di Torino, 5/4/2017

Nhan Le Thanh:

- Reviewer and President of the Jury for Jérémy Bénard, "Import, export et traduction sémantiques génériques basés sur une ontologie de langages de représentation de connaissances", Université de La Réunion, June 12th.
- Reviewer for HDR thesis of Jean-Baptiste LAMY, "Représentation, iconisation et visualisation des connaissances : Principes et applications à l'aide à la décision médicale", University of Rouen, December 12th.

Isabelle Mirbel was jury member of PhD Thesis :

- Samedi Heng, "Impact of Unified User-Story-Based Modeling on Agile Methods: Aspects on Requirements, Design and Life Cycle Management", under the supervision of Yves Wautelet and Manuel Kolp, Université Catholique de Louvain, February.
- Guillaume Surroca, "ViewointS: vers une émergence de con- naissances collectives par élicitation de point de vue", under the supervision of Stefano A. Cerri, Philippe Lemoisson and Clément Jonquet, Université de Montpellier, June.

Andrea Tettamanzi was reviewer of the PhD thesis of:

- Iacopo Vagliano, *Content Recommendation Through Linked Data*, Politecnico di Torino, May 5th;

and Chairman of the Jury for the thesis of

- Tuan Anh Pham, *Study and integration of the mechanism of workflow control in MVC (Model View Controler) architecture: design and implementation of an APM (Activity Process Management) platform for dynamic information systems on the networks*, September 22nd.

10.2.4. Internships

- Arthur Lemaire de Mil

  Date: May–August

  Institution: École Nationale Supérieure de Cognitique, École Polytechnique de Bordeaux.

  Title: User-centered redesign of the user Interface allowing to remotely control the AZKAR robot

  Supervisors: Thierry Bergeron, Alain Giboin.

10.3. Popularization

Michel Buffa:

- New-York-Times, March 14th: "Let a Robot Be Your Museum Tour Guide" [0].
- Nice-Matin December 8th: "Et si vous visitiez une exposition à l'autre bout de la planète, sans bouger de votre salon" [0].

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[0] https://www.nytimes.com/2017/03/14/arts/design/museums-experiment-with-robots-as-guides.html
[0] http://www.nicematin.com/sciences/dossier-et-si-vous-visitiez-une-exposition-a-lautre-bout-de-la-planete-sans-bouger-de-votre-salon-190462

Catherine Faron Zucker:

- Interview on Artificial Intelligence for Higher Education in *L'Etudiant* online journal [0].

Fabien Gandon:

- Interview for Science et Vie Junior about Semantic Web
- Interview for Survey Magazine about Semantic Web
- SIF article on the history of the Web [62]

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[0] http://www.letudiant.fr/educpros/entretiens/intelligence-artificielle-entre-dans-enseignement-superieur.html

ZENITH Project-Team

10. Dissemination

10.1. Scientific Animation

Editorial board of scientific journals:

- VLDB Journal: P. Valduriez.

- Journal of Transactions on Large Scale Data and Knowledge Centered Systems: R. Akbarinia and E. Pacitti are guest editors of a special issue on data management in internet of things (IoT).

- Distributed and Parallel Databases, Kluwer Academic Publishers: E. Pacitti, P. Valduriez.

- Internet and Databases: Web Information Systems, Kluwer Academic Publishers: P. Valduriez.

- Journal of Information and Data Management, Brazilian Computer Society Special Interest Group on Databases: P. Valduriez.

- Book series "Data Centric Systems and Applications" (Springer): P. Valduriez.

- Multimedia Tools and Applications: A. Joly.

Organization of conferences and workshops:

- Alexis Joly was the chair of the LifeCLEF 2017 international workshop [0] dedicated to content-based biodiversity identification techniques, Dunlin, sept. 2017

- Alexis Joly was in the organizing committee of the Floris'tic national workshop held in Toulouse, nov. 2017 (http://floristic.org/journeefloristic/)

Conference program committees :

- International Conference on Very Large Data Bases (VLDB), 2017: R. Akbarinia, F. Masseglia

- International Workshop on Big Data Management in Cloud Systems, 2017: R. Akbarinia

- International Conference on XLDB, 2017: P. Valduriez

- Int. Conf. on Extending DataBase Technologies (EDBT), 2017: E. Pacitti

- 2nd Workshop on Big Data and Data Mining Challenges on IoT and Pervasive Systems (BigD2M), 2016: E. Pacitti

- ACM Multimedia conference (ACMMM), 2017: A. Joly

- IEEE International Conference on Image Processing (ICIP), 2017: A. Joly

- ACM International Conference on Multimedia Retrieval (ICMR), 2017: A. Joly

- International Conference and Labs of the Evaluation Forum (CLEF), 2017: A. Joly

- IEEE Int. Conf. on Data Mining, 2017: F. Masseglia

- ACM Symposium on Applied Computing 2017: F. Masseglia

- IEEE Int. Conf. on Data Science and Advanced Analytics (DSAA), 2017: F. Masseglia

- Int. Symposium on Information Management and Big Data (SimBig), 2017: F. Masseglia

- Int. Symposium on Methodologies for Intelligent Systems (ISMIS), 2017: F. Masseglia

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[0]http://www.imageclef.org/lifeclef/2017

Reviewing in international journals :

- Distributed and Parallel Databases: R. Akbarinia
- ACM Transactions on Database Systems (TODS): A. Joly
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI): A. Joly
- Information Sciences: A. Joly
- Ecological Informatics: A. Joly
- Multimedia Tools and Applications Journal (MTAP): A. Joly
- Multimedia Systems: A. Joly
- Transactions on Information Forensics & Security: A. Joly
- International Journal of Computer Vision: A. Joly
- Transactions on Image Processing: A. Joly
- ACM Trans. on Database Systems: E. Pacitti
- Knowledge and Information Systems (KAIS): F. Masseglia
- IEEE Transactions on Knowledge and Data Engineering (TKDE): F. Masseglia
- Transactions on Parallel and Distributed Systems (TPDS): F. Masseglia
- Data Mining and Knowledge Discovery (DMKD): F. Masseglia
- International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKS): F. Masseglia
- Transactions on Large-Scale Data and Knowledge-Centered Systems (TLKDS): F. Masseglia

Other activities (national):

- P. Valduriez is the scientific manager for the Latin America zone at Inria's Direction of Foreign Relationships (DPEI). In 2017, he has been elected President of the Scientific Committee of the BDA conference for 4 years.
- P. Valduriez gave an invited talk "Data science and science data" on Dec. 1, at the first seminar of Axis 4 "Information systems, data storage and transfer" of the #Digitag Institut de Convergence on numerical agriculture, in Montpellier.
- Alexis Joly gave invited talks in Conference of the biology society of Montpellier 2017 (60 participants), Transfer-LR seminar 2017 on machine learning (100 participants), CIRAD BIOS department seminar 2017 (100 participants).
- Alexis Joly served as a reviewer for the French International Cooperation program (STIC AmSud)
- F. Masseglia participated to a Panel for Inria's 50th anniversary in Grenoble on "digital litteracy", November 2017.
- F. Masseglia gave invited talks: on "Big Data Analytics" at Univ. of Marseille, January 27 ; on "Massively Distributed Time Series Analytics" for LIRMM's 25th anniversary ; on "Computer Science for Everyone" at "Université du Tiers Temps" (UTT), March 2017.
- F. Masseglia served as a reviewer for international programs (STIC AmSud, ECOS SUD).
- F. Masseglia is scientific referent for Inria on the frame agreement with SAFRAN about "System Monitoring and Data Analytics".
- F. Masseglia is "Chargé de mission pour la médiation scientifique Inria" and heads Inria's national network of colleagues involved in science popularization.
- E. Pacitti is responsible for new comers at Polytech' Montpellier's Direction of Foreign Relationships.

Other activities (international):

- E. Pacitti gave an invited talk at CEFET, Rio de Janeiro on nov 27 on "uncertainty analysis of big simulation data".

- P. Valduriez gave several invited talks: "The CloudMdsQL Multistore System" on may 2 at the Data Systems Group Seminar Series, University of Waterloo, Canada, and on may 4 at McGill University, Montréal, Canada; "Data Science: opportunities and risks" on july 26 at the Colloquium of PESC/COPPE, UFRJ, Rio de Janeiro; "An Overview of Polystores" on oct 11 at the XLDB conference in Clermont-Ferrand; "Data science and science data" on nov 27 at CEFET, Rio de Janeiro.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Most permanent members of Zenith teach at the Licence and Master degree levels at UM2.

Reza Akbarinia:

Master Research: New approaches for data storage, 10h, level M2, Faculty of Science, UM

Florent Masseglia:

Science Popularization: 2 Ph.D students, from 2 different doctoral schools are having a 30h doctoral module under Florent Masseglia's supervision.

Esther Pacitti:

IG3: Database design, physical organization, 54h, level L3, Polytech'Montpellier, UM2

IG4: Networks, 42h, level M1, Polytech' Montpellier, UM2

IG4: Object-relational databases, 32h, level M1, Polytech' Montpellier, UM2

IG5: Distributed systems, virtualization, 27h, level M2, Polytech' Montpellier, UM2

Industry internship committee, 50h, level M2, Polytech' Montpellier

Patrick Valduriez:

Professional: Distributed Information Systems, Big Data Architectures, 75h, level M2, Capgemini Institut

10.2.2. Supervision

- PhD in progress: Gaetan Heidsieck Distributed Management of Scientific Workflows for High-Throughput Plant Phenotyping, started Oct 2017, Univ. Montpellier, Esther Pacitti, Christophe Pradal, François Tardieu

- PhD in progress: Christophe Botella, Large-scale Species Distribution Modelling based on crowd-srouced image streams, started Oct 2016, Univ. Montpellier, Alexis Joly, François Munoz (IRD), Pascal Monestiez (INRA)

- PhD in progress: Titouan Lorieul, Pro-active Crowdsourcing, started Oct 2016, Univ. Montpellier, Advisor: Alexis Joly

- PhD in progress: Mehdi Zitouni Closed Pattern Mining in a Massively Distributed Environment started sept. 2014, Univ. Tunis, Advisor: Florent Masseglia, co-advisor: Reza Akbarinia

- PhD in progress : Djamel-Edine Yagoubi, Indexing Time Series in a Massively Distributed Environment, started oct. 2014, Univ. Montpellier, Advisors: Florent Masseglia and Patrick Valduriez, co-advisor: Reza Akbarinia

- PhD in progress : Sakina Mahboubi, Privacy Preserving Query Processing in Clouds, started oct. 2015, Univ. Montpellier, Advisor: Patrick Valduriez, co-advisor: Reza Akbarinia

- PhD in progress: Khadidja Meguelati, Massively Distributed Clustering, started Oct 2016, Univ. Montpellier, Advisor: Florent Masseglia, co-advisor : Nadine Hilgert (INRA)
- PhD in progress: Vitor Silva, Supporting Human-in-the-Loop in Large-scale Workflows, started 2014, UFRJ, Brazil Advisors: Marta Mattoso (UFRJ), Daniel Oliveira (UFF), Patrick Valduriez
- PhD in progress: Renan Souza, Massively Distributed Clustering, started 2015, UFRJ, Brazil Advisors: Marta Mattoso (UFRJ), Daniel Oliveira (UFF), Patrick Valduriez

10.2.3. Juries

Members of the team participated to the following PhD committees:

- A. Joly: Sanaa Chafik (ENSEM Casablanca)
- E. Pacitti: Vincent Leroy (HDR, Univ. Grenoble), Douglas Ericson Marcelino de Oliveira (UFF, Rio de Janeiro), Pauline Folz (Univ. Nantes, reviewer), Uras Tos (Univ. Toulouse, reviewer), Carlyna Bondlombouy (Univ. Montpellier).
- P. Valduriez: Patrick KamnangWanko (Univ. Bordeaux), Julien Pilourdault (Univ. Grenoble, reviewer), Yvan Brondino (Univ. Madrid, reviewer)
- F. Masseglia: Andres Moreno (Univ. Nice-Sophia Antipolis), Kenza Kellou-Menouer (Univ. Versailles St-Quentin), Raef Mousheimish (Univ. Versailles St-Quentin, reviewer)

Members of the team participated to the following hiring committees:

- A. Joly: associate professor position, Univ. Toulon
- P. Valduriez: associate professor position, Univ. Nantes

10.3. Popularization

Zenith has major contributions to science popularization, as follows.

10.3.1. Code Teaching for Kids

Teaching code is now officially in the school programs in France. Class'Code is a PIA project that aims at training the needed 300,000 teachers and professionals of education France. The project is a hybrid MOOC (both online courses and physical meetings). Florent Masseglia is co-author of the first course and scientific referent of the other courses.

Along with Class'Code, the association "La main à la pâte" has coordinated the writing of a school book on the teaching of computer science teaching, with Inria (Gilles Dowek, Pierre-Yves Oudeyer, Florent Masseglia and Didier Roy), France-IOI and the University of Lorraine. The book has been requested by and distributed to 15,000 readers in less than one month. The extension of this book for the French "Collège" has been released this year with new activities and new scientific content.

F. Masseglia is giving a doctoral training at different doctoral schools in Montpellier, in order to train facilitators for helping teachers and people of the education world to better understand the "computational thinking". So far, 14 people have been trained. He is also a member of the management board of "Les Petits Débrouillards" in Languedoc-Roussillon and the scientific responsible for school visits in the LIRMM laboratory.

F. Masseglia is member of the pedagogic committee of "Edu'up", a project from France-IOI on learning code and computational thinking.

10.3.2. Science Outreach

In the context of the Floris'tic project, A. Joly participates regularly to the set up of popularization, educational and citizen science actions in France (with schools, cities, parks, etc.). The softwares developed within the project (Pl@ntNet, Smart'Flore and ThePlantGame) are used in a growing number of formal educational programs and informal educational actions of individual teachers. For instance, Smart'Flore is used by the French National Education in a program for reducing early school leaving. Pl@ntNet app is used in the Reunion island in an educational action called Vegetal riddle organized by the Center for cooperation at school. It is also used in a large-scale program in the Czech republic (with an objective of 40 classrooms in the end). An impact study of the Pl@ntNet application did show that 6% of the respondents use it for educational purposes in the context of their professional activity.

10.3.3. Events

Zenith participated to the following events:

- F. Masseglia co-organized and co-animated the Inria's stand at "La fête de la science", Montpellier, held by Genopolys (a science village).

- F. Masseglia co-organized the regional Code-Week events with the local network of media-library ("réseau des médiathèques de Montpellier Méditerranée Métropole").

- F. Masseglia is member of the project selection committee for "La fête de la science" in Montpellier.

- A. Joly designed/animated several stands and public demos in events: "La fête de la science" (Montpellier, 1 day demo), 50 ans de l'Inria (Paris, 2-days demo), Expomobile Homonumericus (Itinerant expo in France).