



RESEARCH CENTER
Paris - Rocquencourt

FIELD

Activity Report 2014

Section Dissemination

Edition: 2015-03-24

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ALPAGE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Member of the conference program committee

- Benoît Sagot has served as member of the program committee for the following events: TALN 2014, SPMRL-SANCL 2014 (Workshop at COLING 2014)
- Marie Candito has served as member of the program committee for the following events: SPMRL-SANCL 2014 (Workshop at COLING 2014)
- Pierre Magistry has served as a member of the program committee for the following event: “Questionnements sur la didactique des sinogrammes”, workshop organised by the CERLOM, Inalco
- Éric Villemonte de La Clergerie has served as PC member for the following events: COLING 2014 (area Resources), AAI SA-14 (AAAI-14 Student Abstract and Poster Program), TALN’14 SemDis Workshop, STAIRS-2014 (the 7th Starting AI Researcher Symposium)

9.1.1.2. Reviewer

- Benoit Crabbé has served as a reviewer for the following events : TALN 2014, RECITAL, COLING, Formal Grammar.
- Benoît Sagot has served as reviewer for the following events: ACL 2014, LREC 2014, WoLE 2014 (LREC workshop), PolTAL 2014, Coldoc 2014, RECITAL 2014, NLP4CMC, SHESL-HTL 2015
- Chloé Braud has served as a reviewer for the following event: ConSOLE XXIII
- Corentin Ribeyre has served as a reviewer for the following event: ConSOLE XXIII
- Kata Gábor served as a reviewer for the following event(s)/journal(s): LREC 2014, Cicing 2014, ConSOLE XXIII
- Laurence Danlos has served as a reviewer for the following conferences: LREC 2014, TALN 2014, CMLF 2014
- Marianne Djemaa has served as a reviewer for the following event: ConSOLE XXIII
- Marie Candito has served as reviewer for the following events: ACL 2014, EMNLP 2014, COLING 2014, SEMDIS 2014 (workshop at TALN 2014)
- Éric Villemonte de La Clergerie has served as a reviewer for the following events: LREC 2014, LATIN 2014

9.1.2. Journal

9.1.2.1. Member of the editorial board

- Laurence Danlos served as a member of the editorial board of *Traitement Automatique des Langues (TAL)*
- Éric Villemonte de La Clergerie has served as Chief Editor of *Traitement Automatique des Langues (TAL)*

9.1.2.2. Reviewer

- Benoit Crabbé has served as a reviewer for the following journals: Journal of Language Modelling, Language Resources Evaluation, Linguisticae Investigationes
- Benoît Sagot has served as a reviewer for the following journal: Natural Language Engineering

- Lucie Barque has served as a reviewer for the following journal: Neologica
- Éric Villemonte de La Clergerie has served as reviewer for the following journal: Journal of Language Modelling

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Benoit Crabbé, Introduction à la programmation, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Benoit Crabbé, Introduction à la linguistique informatique, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Benoit Crabbé, Introduction aux probabilités pour la linguistique, 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France.

Licence: Chloé Braud, Programmation 2, 28 heures en équivalent TD, niveau L3, Université Paris 7, France

Licence: Corentin Ribeyre, TD d'Algorithmique, 24 heures en équivalent TD, niveau L3, Université Paris 7 Diderot, France

Licence: Laurence Danlos, Introduction au TAL, 32 heures en équivalent TD, niveau L3, Université Paris-Diderot, France

Licence: Lucie Barque, Sémantique lexicale, 45 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Lucie Barque, Morphologie lexicale, 22,5 heures en équivalent TD, Université Paris 13, France

Licence: Lucie Barque, Fondamentaux de la grammaire, 67,5 heures en équivalent TD, niveau L1, Université Paris 13, France

Licence: Lucie Barque, Introduction aux sciences du langage, 22,5 heures en équivalent TD, niveau L2, Université Paris 13, France

Licence: Marianne Djemaa, Programmation 1 (TD), 24 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Licence: Marie Candito, Linguistique de corpus, 28 heures en équivalent TD, niveau L3, Université Paris Diderot, France

Master: Benoit Crabbé, Méthodes probabilistes pour le TAL, 48 heures en équivalent TD, niveau M1, Université Paris Diderot, France.

Master: Benoit Crabbé, Linguistique empirique et expérimentale, 24 heures en équivalent TD, niveau M2, Université Paris Diderot, France.

Master: Benoît Sagot, Analyse syntaxique du langage naturel, 28 heures en équivalent TD, niveau M1, Université Paris 7, France

Master: Chloé Braud, Sémantique Computationnelle, 24 heures en équivalent TD, niveau M1, Université Paris 7, France

Master: Corentin Ribeyre, TD de Langages Formels, 24 heures en équivalent TD, niveau M1, Université Paris 7 Diderot, France

Master: Éric Villemonte de La Clergerie, "Structures Informatiques et Logiques pour la Modélisation Linguistique", 18 heures en équivalent TD, niveau M2, MPRI, France

Master: Laurence Danlos, Discours: Analyse et génération de textes, 32 heures en équivalent TD, niveau M2, Université Paris-Diderot, France

Master: Lucie Barque, Ressources lexicales pour le TAL, 27 heures en équivalent TD, niveau M2, Université Paris 13, France

Master: Marie Candito, Analyse sémantique automatique du langage naturel, 28 heures en équivalent TD, niveau M2, Université Paris Diderot, France

Master: Marie Candito, Traduction automatique, 51 heures en équivalent TD, niveau M1, Université Paris Diderot, France

Master: Maximin Coavoux, Approches probabilistes du TAL (TD), 24 heures en équivalent TD, niveau M1, Université Paris Diderot, France

9.2.2. Supervision

PhD in progress: Marion Baranes, “Normalisation de textes bruités”, started in January 2012, supervised by Laurence Danlos (supervisor) and Benoît Sagot (co-supervisor)

PhD in progress: Valérie Hanoka, “Extraction et Structuration de Terminologie Multilingue”, started in January 2011, supervised by Laurence Danlos (supervisor) and Benoît Sagot (co-supervisor)

PhD in progress: Emmanuel Lassale, “Structured learning for coreference resolution: a joint approach”, Université Paris-Diderot, started in October 2010, supervised by Laurence Danlos (supervisor) and Pascal Denis (co-supervisor)

PhD in progress: Chloé Braud, “Analyse discursive : les relations implicites”, Université Paris-Diderot, started in October 2011, supervised by Laurence Danlos (supervisor) and Pascal Denis (co-supervisor)

PhD in progress: Quentin Pradet, “Annotations en rôles sémantiques du français en domaine spécifique”, Université Paris-Diderot, started in October 2011, supervised by Laurence Danlos (supervisor) and Gael de Calendar (co-supervisor)

PhD in progress: Raphael Salmon, “Implémentation d’un système de génération à base de contraintes”, Université Paris-Diderot, started in October 2013, supervised by Laurence Danlos (supervisor) and Alain Kaeser (co-supervisor)

PhD in progress: Jacques Steinlin, “Les relations implicites et les AltLex dans le FDTB”, Université Paris-Diderot, started in Novembre 2014, supervised by Laurence Danlos

PhD in progress: Marianne Djemaa, "Création semi-automatique d'un FrameNet du français", started in October 2012, supervised by Marie Candito

PhD in progress: Corentin Ribeyre, “Vers la syntaxe profonde pour l’interface syntaxe-sémantique”, started in November 2012, supervised by Laurence Danlos (supervisor), Djamé Seddah (co-supervisor) and Éric Villemonte de La Clergerie (co-supervisor). from data driven approaches to graph based approaches.

PhD in progress: Isabelle Dautriche, “Exploring early syntactic acquisition: a experimental and computational approach”, started in September 2012, supervised by Anne Christophe (LSCP, supervisor) and Benoit Crabbé (co-supervisor)

PhD in progress: Maximin Coavoux, “Représentations continues pour l’analyse syntaxique et sémantique automatique”, started in September 2015, supervised by Benoit Crabbé.

9.2.3. Juries

- Marie Candito served as a member in the PhD defense committee of Ophélie Lacroix. Title: De l’étiquetage syntaxique pour les grammaires catégorielles de dépendances à l’analyse par transition dans le domaine de l’analyse en dépendances non-projective. University: Université de Nantes Angers Le Mans. PhD supervisors: Colin de la Higuera and Denis Béchet. Defense date: December 8th, 2014.
- Marie Candito served as a member in the PhD defense committee of Sandrine Ollinger. Title: Le raisonnement analogique en lexicographie, son informatisation et son application au Réseau Lexical du Français. University: Université de Lorraine. PhD supervisor: Alain Polguère. Defense date: December 15th, 2014.

- Laurence Danlos served as a member in the PhD defense committee of Sai Qian. Title: Accessibility of Referents in Discourse Semantics University : Université de Lorraine PhD supervisors : Philippe de Groote and Maxime Amblard. Defense date : July 11th, 2014.
- Éric Villemonte de La Clergerie as served as a member in the PhD defense of Simon Petijean. Title: "Génération modulaire de Grammaires Formelles". PhD supervisors: Denys Duchier and Yannick Parmentier. University: Université d'Orléans. Defense date: December 11th 2014
- Benoît Sagot served as a member in the PhD defense committee of Édouard Grave. Title: A Markovian approach to distributional semantics. University: Université Paris VI - Pierre et Marie Curie. PhD supervisors: Francis Bach and Guillaume Obozinski. Defense date: January 20th, 2014.

9.2.4. Other activities

- Benoît Sagot is elected board member of the French NLP society (ATALA) and was its Secretary until June 2013.
- Benoît Sagot is a member of the scientific board of the consortium Corpus Écrits, which belongs to the TGIR Huma-Num
- Benoît Sagot represents Alpage at the board of the Institut de Linguistique Française, a CNRS federation (Alpage is a member of the Institut de Linguistique Française since June 2013)
- Benoît Sagot is a member of the Permanent Committee of the TALN conference organized by ATALA.
- Laurence Danlos is the deputy chair of the Doctoral School for Linguistic Sciences (École Doctorale de Sciences du Langage).
- Laurence Danlos is the chair of the Scientific Committee of the UFR of Linguistics of University Paris Diderot.
- Marie-Hélène Candito is the deputy chair of the UFR of Linguistics of University Paris Diderot.
- Djamé Seddah is the head teacher (*directeur pédagogique*) of the transversal Computer Science class (C2I) at the University Paris-Sorbonne.
- Benoit Crabbé and Laurence Danlos are members of the Administrative board of the UFR of Linguistics of University Paris Diderot.
- Benoit Crabbé co-organized the research seminar : lectures in experimental linguistics (Univ P7)
- Benoit Crabbé is responsible for the L3 computational linguistics (Univ Paris Diderot)
- Laurence Danlos is responsible for the M2 computational linguistics (Univ Paris Diderot)
- Éric Villemonte de La Clergerie has served as SIGParse secretary
- Benoît Sagot is a member of the Governing Board and of the Scientific Board of the **LabEx EFL**, as head of the research strand on language resources; he is also in charge of several reserach operations; Benoit Crabbé is deputy-head of the research strand on experimental grammar; Marie-Hélène Candito and Laurence Danlos are in charge of one research operation each. Laurence Danlos is a member of the Scientific Board, representing Alpage.
- Marie-Hélène Candito organized the Alpage research seminar.

9.3. Popularization

- Éric Villemonte de La Clergerie has presented some simple NLP tasks at the ISN day (for Math teachers, computer science option, April 8th, http://euler.ac-versailles.fr/webMathematica/reflexionpro/2013_2014/Seminaire/eric_de_la_clergerie.pdf)
- Éric Villemonte de La Clergerie has presented a survey on the use on NLP tools for MOOCs at the Moolab day on "Moocs : de la correction automatique à la personnalisation des cursus" (Paris, January 14th)

ALPINES Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

- Laura Grigori: Co-Chair, Parallel Matrix Algorithms and Applications Workshop, Lugano, Switzerland, June 2014.
- Laura Grigori: Program Director of the SIAM SIAG on Supercomputing (SIAM special interest group on
- Frédéric Hecht: Organizing the 6th FreeFem++ days (December 2014, paris)
- Frédéric Hecht: responsable de la session Maillage, Horizon Maths 2014, FSMP and IFPen, Reuil-Malmaison. supercomputing), January 2014 - December 2015.

8.1.1.2. Member of the organizing committee

- Laura Grigori: Member of organizing committee, SIAM Conference on Parallel Processing and Scientific Computing, February 2014, Portland, USA.
- Laura Grigori: Member of Organizing Committee, Combinatorial Scientific Computing Workshop, Lyon 2014.

8.1.2. Scientific events selection

8.1.2.1. Responsible of the conference program committee

- Laura Grigori: Chair of Parallel Numerical Algorithms Area, EuroPar Conference September 2014.

8.1.2.2. Member of the conference program committee

- Laura Grigori: Member of Program Committee of IEEE International Parallel and Distributed Processing Symposium, IPDPS 2015.
- Laura Grigori: Member of Program Committee of HiPC 2014, 19th IEEE Int'l Conference on High Performance Computing.

8.1.3. Journal

8.1.3.1. Member of the editorial board

- Laura Grigori: Area editor for Parallel Computing Journal, Elsevier, since June 2013.
- Laura Grigori: Member of the editorial board for the SIAM book series Software, Environments and Tools. See <http://www.siam.org/books/series/se.php>. Since March 2014.
- Frédéric Nataf: Member of the editorial board of Journal of Numerical Mathematics since 2012.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence : Xavier Claeys, 2MOI1: Orientation et Insertion Professionnelle, 40 hrs de travaux pratiques, niveau L2, Université Pierre et Marie Curie, France

Master : Xavier Claeys, MM009: Informatique de base, 72 hrs de travaux pratiques en programmation C++, niveau M1, Université Pierre et Marie Curie, France

Master : Xavier Claeys, NM406: Résolution des EDP par la méthode des éléments finis, 18 hrs de travaux pratiques en programmation C++, niveau M2, Université Pierre et Marie Curie, France

Master : Xavier Claeys, MM031: Informatique Scientifique, 44 hrs de de cours magistral, niveau M1, Université Pierre et Marie Curie, France

Master: Laura Grigori, Course on *Calcul haute performance, algorithmes parallèles d'algèbre linéaire à grande échelle, stabilité numérique*, Master 2 Mathématiques & Applications, UPMC, 24 hours.

Master : Frederic Hecht, Tutorials of practical C++ programming for the course *Informatique de Base*, 36 hours, Master 1 Mathématiques et Applications, UPMC, France

Master : Frederic Hecht, Course on Numerical methods for fluid mechanics, 30 hours, Master 2 Mechanics, UPMC, France.

Master : Frederic Hecht, From PDEs to their resolution by finite element methods, 36 hours per year, Master 2 UPMC, France.

Master : Frederic Nataf, Course on Domain Decomposition Methods, 30 hours, Master 2, UPMC, France.

Master : Frederic Nataf, Course on Domain Decomposition Methods, 15 hours, Master 2, ENSTA, France.

8.2.2. Supervision

PhD : Pierre Jolivet, defended September 2014, University of Grenoble, advisors F. Nataf, C. Prudhome and F. Hecht

PhD : Sophie Moufawad, Enlarged Krylov Subspace Methods and Preconditioners for Avoiding Communication, defended December 2014, UPMC, advisor L. Grigori

PhD : Nicole Spillane, (funded by Michelin), co-advisor F. Nataf

PhD : Sylvain Auliac, defended 2014, UPMC, advisor F. Hecht

PhD : Pierre-Henri Tournier, defended 2015, UPMC, advisor F. Hecht and M. Comte

PhD in progress : Sebastien Cayrols, since October 2013 (funded by Maison de la simulation), advisor L. Grigori.

PhD in progress : Ryadh Haferssas, since October 2013 (funded by Ecole Doctorale, UPMC), advisor F. Nataf

PhD in progress : Mireille El-Haddad, since March 2014 (Cotuelle l'Université Saint-Joseph de Beyrouth, Liban et UPMC) , advisors F. Hecht and T. Sayah

8.2.3. Juries

- Laura Grigori: Phd thesis, Laurent Berenguer, Rapportrice, Université Claude Bernard, Lyon 1, Mathématiques Appliquées, defended October 2014.
- Laura Grigori: HDR habilitation of Clement Pernet, Rapportrice, Université de Grenoble, Informatique, defended November 2014.
- F. Nataf: HDR habilitation of Michel Belliard, Rapporteur, Université de Marseille, Applied Mathematics, defended in November 2014.
- F. Nataf: HDR habilitation of Marion Darbas, Université de Picardie, defended in December 2014.
- F. Nataf: Phd thesis, Abdoulaye Samake, Université de Grenoble, Applied Mathematics, defended in December 2014.
- F. Hecht: HDR habilitation of Mme. Naïma Debit, Rapporteur, Université Claude Bernard Lyon I, defended in December 2014.
- F. Hecht: Phd thesis, M. Ange Toulougoussou Université Pierre et Marie Curie , defended in December 2014.
- F. Hecht: Phd thesis, M. Jimmy Mullaert, Université Pierre et Marie Curie, defended in December 2014.
- F. Hecht: Phd thesis, M. Stéphane Veys Université Joseph Fourier, Grenoble , defended in November 2014.
- F. Hecht: Phd thesis, M. Jeremy Veysset, CEMEF - Mines ParisTech, Sophia Antipolis Grenoble , defended in November 2014.
- F. Hecht: Phd thesis, M. Jad Dakroub, Université Pierre et Marie Curie et Université Saint Joseph de Beyrouth defended in October 2014.

ANGE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committee

N. Seguin was a member of the organizing committee of “**Mathematical Hydrodynamics 2014**” which took place in Paris in June.

As a member of EGRIN, A. Mangeney co-organised the 2nd summer school which took place at domaine de Chalès from June, 30. to July, 3.

9.1.2. Involvement in the mathematical community

E. Godlewski is a member of the board of AMIES.

A. Mangeney is a member of the scientific committees of the Institut de Physique du Globe de Paris (Univ. Paris 7), of Observatory of Côte d’Azur, of the Bureau de Recherches Géologiques et Minières and of the CNRS Institut National des Sciences de l’Univers “Natural Hazards”.

Y. Penel is a member of the commission Popularisation of the French society for Applied and Industrial Mathematics (SMAI).

9.1.3. Journal

9.1.3.1. Reviewer

Member	Journal	Others
E. Godlewski	Numerische Mathematik, Computational and Applied Mathematics, ESAIM:M2AN, Journal of Difference Equations	
A. Mangeney	Physics of Fluids, Proceedings of the Royal Society A, Landslides, Journal of Geophysical Research, Journal of Fluid Mechanics, Earth Surface processes and Landforms and Bulletin of Volcanology	
Y. Penel	Journal of Scientific Computing	

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master’s degree (M2) : A. Mangeney and J. Sainte-Marie, Dynamique des Ecoulements gravitaires et tsunamis, 40 hours (lectures and programming classes), Univ. Paris Diderot Paris 7

Master’s degree (M2) : E. Godlewski and J. Sainte-Marie, Models and numerical methods for free surface flows, 20 hours (lectures), Univ. Pierre et Marie Curie Paris 6

Master’s degree (M2) : E. Godlewski, Numerical methods for nonstationary PDEs, 18 hours (example and example classes), Univ. Pierre et Marie Curie Paris 6

Master’s degree (M2) : C. Guichard, Numerical methods for nonstationary PDEs, 18 hours (example and example classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M1) : A. Mangeney, Géologie de l'Environnement, 31 hours (lectures and programming classes), Univ. Paris Diderot Paris 7

Master's degree (M1) : N. Seguin, Mathematics, Numerical Analysis and Algorithmics, 72 hours (lectures, example and programming classes), Univ. Nantes

Engineering school (2nd year) : Y. Penel, Numerical Analysis applied to financial issues, 15 hours (lectures), EFREI

Bachelor's degree (L3) : C. Guichard, Numerical linear algebra, 72 hours (example and programming classes), Univ. Pierre et Marie Curie Paris 6

Engineering school (1st year) : Y. Penel, Partial Differential Equations, 15 hours (example classes), École Centrale Paris

Bachelor's degree (L2 and L3) : C. Guichard, Introduction to Scilab, 36 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L2)] : Y. Penel, Integration in 2 and 3 dimensions, 24 hours (lectures), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1) : N. Seguin, Mathematics for Biology and Chemistry, 50 hours (example classes), Univ. Nantes

Bachelor's degree (L1) : N. Aïssiouene, Calculus, 48 hours (example classes), Univ. Pierre et Marie Curie Paris 6

E. Godlewski is the head of the "Mathematics for Industry" M.Sc. program of Univ. Pierre et Marie Curie Paris 6. We mention that E. Audusse is the deputy director of the "Applied Mathematics and Scientific Computing" program of the SupGalilee engineering school.

9.2.2. Supervision

PostDoc in progress : Vivien Desveaux, *Méthodes d'assimilation de données dans le cadre de la surveillance des agressions biologiques et chimiques*, supervised by J. Sainte-Marie (in collaboration with M. Boulakia), from Nov. 2014

PhD in progress : Nora Aïssiouene, *Derivation and analysis of a non-hydrostatic Shallow water type model*, Univ. Pierre et Marie Curie Paris 6 (Inria grant), supervised by E. Godlewski and J. Sainte-Marie, from Nov. 2013

PhD in progress : Tim Borikov, *Physical processes at play in Martian landslides*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with D. Mège), from 2012

PhD in progress : Do Minh Hieu, *Analyse mathématique et schémas volumes finis pour la simulation des écoulements quasi-géostrophiques à bas nombre de Froude*, Univ. Paris 13, supervised by E. Audusse and Y. Penel (in collaboration with S. Dellacherie and P. Omnes), from Oct. 2014

PhD in progress : Maxime Farin, *Analysis of the seismic signal generated by laboratory granular flows*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with R. Toussaint and J. de Rosny), from 2011

PhD in progress : Dena Kazerani, *Simulation et modélisation de problèmes à frontière libre*, Univ. Pierre et Marie Curie Paris 6, supervised by N. Seguin (in collaboration with P. Frey and C. Audiard), from Oct. 2013

PhD in progress : Jannes Kinscher, *Analysis of seismicity in quarries*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with P. Bernard and I. Contrucci), from 2011

PhD in progress : Clément Mifsud, *Analyse et approximation des systèmes de Friedrichs : application à la modélisation de l'élastoplasticité*, Univ. Pierre et Marie Curie Paris 6, supervised by N. Seguin (in collaboration with J.-F. Babadjian and B. Després), from Oct. 2013

PhD in progress : Laurent Moretti, *Modelling of seismic waves generated by landslides*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with Y. Capdeville), from 2010

PhD in progress : Ethem Nayir, *Approximation multi-vitesse des équations de Navier-Stokes hydrostatiques: Analyse mathématique et simulations numériques*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse, Y. Penel and J. Sainte-Marie, from Oct. 2014

PhD in progress : Amandine Sergeant-Boy, *Detection and characterisation of seismic sources generated by glaciers: numerical modelling and analysis of seismic waves*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with J.-P. Montagner, E. Stutzmann and O. Castelnau), from 2013

PhD in progress : Philippe Ung, *Simulation, modélisation et analyse numérique pour le transport sédimentaire*, Univ. Orléans (EDF-CNRS grant), supervised by E. Audusse and Y. Penel (in collaboration with S. Cordier), from Nov. 2012

M2 internship : Chen Cheng, *Modélisation numérique de l'érosion en rivière : un schéma de relaxation pour le modèle de Saint-Venant Exner*, ENSTA, supervised by E. Audusse, Spring 2014

M2 internship : Do Minh Hieu, *Numerical Analysis For Quasi Geostrophic Flows*, Univ. Paris 13, supervised by E. Audusse and Y. Penel (in collaboration with S. Dellacherie and P. Omnes), Spring 2014

M2 internship : Antoine Haddon, *Interprétation cinétique et schémas à grands pas de temps pour le système de Saint-Venant*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse, Y. Penel and J. Sainte-Marie, Summer 2014

M2 internship : Ethem Nayir, *Analyse mathématique d'un modèle hyperbolique pour les écoulements à surface libre*, Univ. Pierre et Marie Curie Paris 6, supervised by E. Audusse and Y. Penel, Summer 2014

9.2.3. Juries

22/01/14, PhD : J. Sainte-Marie (referee) : David Benoit (Univ. Paris-Est, *Divers problèmes théoriques et numériques liés à la simulation de fluides non newtoniens*)

09/10/14, HdR : A. Mangeney : Frédéric Cappa (Univ. Nice, *Le rôle des fluides dans la mécanique des failles et des glissements de terrain*)

17/10/14, PhD : N. Seguin (referee) : Arnaud Duran, (Univ. Montpellier 2, *Numerical simulation of depth-averaged flow models: a class of Finite Volume and discontinuous Galerkin approaches*)

09/12/14, PhD : E. Godlewski (president) : Mathieu Girardin (Univ. Pierre et Marie Curie Paris 6, *Méthodes numériques tout-régime et préservant l'asymptotique de type Lagrange-Projection. Application aux écoulements diphasiques en régime bas Mach*)

09/12/14, PhD : A. Mangeney : Nadège Langet (IPG Strasbourg), *Détection et caractérisation massives de phénomènes sismologiques pour la surveillance d'évènements traditionnels et la recherche systématique de phénomènes rares*)

9.3. Popularisation

2014 : E. Audusse intervened in a secondary school (Pontault Combault) for "Maths en Jeans".

2014 : P. Ung presented his PhD topic in a high school (Lycée Duhamel Du Monceau, Pithiviers). This intervention was an initiative of "Centre-Science" (Orléans) in the context of a doctoral training.

26–28/11/14 : M. Parisot and Y. Penel ran the stand of the French mathematics community (SFdF, SMAI, SMF) at the Onisep part of the European exhibition for Education.

12/12/2014 : E. Audusse gave a talk at Bobigny for Mathematic Park entitled "Maths and Natural Hazards".

Alongside these events, the web platform TsunaMaths developed by E. Audusse, R. Hamouda and J. Sainte-Marie was presented at the exhibition on the occasion of "Mathematics of Planet Earth" (December 2012-December 2013) at the Deutsches Technikmuseum (Berlin). It was also a part of the Nims-Imaginary exhibition at Seoul (Aug. 13-20, 2014) on the occasion of ICM2014.

ANTIQUÉ Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. member of the steering program committee

Jérôme Feret is member of the Steering Committee of the international Workshop on Static Analysis and Systems Biology (SASB).

9.1.1.2. member of the organizing committee

Tie Cheng was a member of the Organizing Committee of EuSprIG 2014.

Antoine Miné was a member of the Organizing Committee of the 5th Workshop on Tools for Automatic Program Analysis (TAPAS 2014), Munich, Germany, 10 September, 2014.

9.1.2. Scientific events selection

9.1.2.1. responsible of the conference program committee

Xavier Rival was Co-Chair of the Program Committee of the 15th International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI 2014), San Diego, USA, January 19-21, 2014, [32]).

9.1.2.2. member of the conference program committee

Jérôme Feret was member of the Program Committee of the 15th International Conference on Verification, Model Checking and Abstract Interpretation (VMCAI 2014), San Diego, USA, January 19–21, 2014; of the Program Committee of the Sixth International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO 2014), CHamonix, France, April 20–24, 2014; of the Program Committee of the 10th International Workshop on Developments in Computational Models (DCM 2014), Vienna, Austria, July 13 2014; of the Program Committee of the International Workshop on Verification of Engineered Molecular Devices and Programs (VEMDP 2014), Vienna, Austria, July 17, 2014; of the Program Committee of the 3rd International Conference on Biomedical Engineering and Biotechnology (iCBEB 2014), Beijing, China, August 18–20, 2014. of the Program Committee of the 8th IFIP International Conference on Theoretical Computer Science (TCS 2014), Rome, Italy, September 1–3, 2014; of the Program Committee of the 5th International Workshop on Static Analysis and Systems Biology (SASB 2014), München, Germany, September 10, 2014; of the Program Committee of the 19th International Workshop on Formal Methods for Industrial Critical Systems (FMICS 2014), Florence, Italy, September 11–12, 2014; Jérôme Feret is member of the Program Committee of of the Program Committee of 11th International Workshop on Developments in Computational Models (DCM 2015), Cali, Colombia, October 28, 2015; of the Program Committee of the 7th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO 2015), Rome, Italy, May 24–29, 2015; of the Program Committee of the 24th International Symposium on Logic-based Program Synthesis and Transformation (LOPSTR 2015), Siena, Italy, July 13–15, 2015.

Xavier Rival was member of the Program Committee of the 41st ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2014 PC), San Diego, USA, January 22-24, 2014; of the Program Committee of the 21st International Static Analysis Symposium (SAS 2014), München, Germany, September 11–13, 2014; of the Extended Review Committee of the 42nd ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2015 ERC), Mumbai, India, January 15-17, 2015.

Antoine Miné was member of the Program Committee of the 5th International Workshop on Polyhedral Compilation Techniques (IMPACT'5), Amsterdam, The Netherlands, the 11th International Conference on Integrated Formal Methods (iFM'14), Bertinoro, Italy, 9–11 September 2014, the 11th School on MODelling and VERifying parallel Processes (MOVEP'14), Nantes, France, 7–11 July 2014, and the 8th International Symposium on Theoretical Aspects of Software Engineering (TASE'14), Changsha, China, 1–3 September 2014. Antoine Miné was member of the External Review Committee of the 42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL'14), Mumbai, India, 11-18 January 2015. Antoine Miné is member of the Program Committee of the 22nd International Static Analysis Symposium (SAS'15), Saint-Malo, France, 9–11 September 2015, and the 9th International Symposium on Theoretical Aspects of Software Engineering (TASE'15), Nanjing, China, 12–14 September 2015.

Caterina Urban is member of the Competition Jury for the 4th Competition on Software Verification (SV-COMP 2015) to be held at TACAS 2015 in London, UK.

9.1.2.3. reviewer

Arlen Cox was a reviewer for the 21st International Static Analysis Symposium (SAS 2014), München, Germany, September 11–13, 2014.

Jérôme Feret was a reviewer for the 42nd ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2015), Mumbai, India, January 15–17, 2015, and for the 18th International Conference on Foundations of Software Science and Computation Structures (FoSSaCS 2015), London, UK, April 11–18, 2015.

Xavier Rival was a reviewer for the Symposium on Programming Languages Design and Implementation (PLDI 2014), Edimburgh, UK, June 9–11, 2014, and for the AVICPS Workshop, Rome, Italy, December 2, 2014.

Antoine Miné was a reviewer for the 12th Asian Symposium on Programming Languages and Systems (APLAS 2014), Singapore, November 17-19, 2014, the 35th annual ACM SIGPLAN conference on Programming Language Design and Implementation (PLDI 2015), Edinburgh, UK, 9–11 June 2014, and the 21st International Static Analysis Symposium (SAS 2014), Munich, Germany, September 11–13, 2014.

Caterina Urban was reviewer for the conference Theoretical Computer Science (TCS), Roma, Italy, 1–3 September 2014, and the 26th International Conference on Computer Aided Verification (CAV 2014), Vienna, Austria, 18–22 July, 2014.

9.1.3. Journal

9.1.3.1. member of the editorial board

Jérôme Feret is a member of the editorial board of the [Frontiers in Genetics](#) journal and the [Open Journal of Modelling and Simulation](#)

Antoine Miné is member of the editorial board of The Scientific World Journal and of Conference Papers in Computer Science.

9.1.3.2. reviewer

In 2014, Jérôme Feret was a reviewer for BMC Systems Biology; Software, Practice and Experience; Transactions on Modeling and Computer Simulation; PLOS Computational Biology; BMC Bioinformatics; and Axioms.

Antoine Miné was a reviewr for the Computer Languages, Systems & Structures journal, the Software and Systems Modeling journal, and the Transactions on Programming Languages and Systems journal.

9.1.4. Grants selection

9.1.4.1. reviewer

Jérôme Feret was a reviewer for the Swiss National Science Foundation.

9.1.5. Participation in Conferences

- CAV: Arlen Cox and Caterina Urban attended the conference on Computer Aided Verification (Vienna, Austria, July 22, 2014). Arlen Cox gave a talk on “QUICr: A Parametric Abstraction Domain for Sets of Numbers”.
- ECCB: Wassim Abou-Jaoudé attended the European Conference on Computational Biology (Strasbourg, France, September, 2014) and gave an invited talk on [8] at the workshop on Logical Modelling and Analysis of Cellular Networks.
- ESOP: Antoine Miné and Caterina Urban attended the 23rd European Symposium on Programming (Grenoble, France); Caterina Urban presented an article [27].
- EuSprIG: Tie Cheng attended the Conference of the European Spreadsheet Risk Interest Group (EuSprIG, July 2014).
- ISOLA: Xavier Rival attended the International Symposium On Leveraging Applications of Formal Methods, Verification and Validation (Corfu, Greece, October 2014), and presented an article [24].
- ITP: Arnaud Spiwack attended the International Conference on Interactive Theorem Proving (ITP 2014, Vienna, July 2014), and presented an article [23].
- JRSIF: Mehdi Bouaziz attended the research day of SIF “De la formation à l’innovation en Informatique”, (Paris, France, September 2014).
- JSTools: Arlen Cox attended the workshop on JavaScript Tools (Uppsala, Sweden, July 28, 2014) and gave a talk on “JSAna with HOO: Automatically Verifying JavaScript Libraries without Client Code”.
- LICS: Patrick Cousot, Jérôme Feret, and Caterina Urban attended the Twenty-Ninth Annual ACM/IEEE Symposium on Logic in Computer Science (LICS 2014, Vienna, July 2014). Patrick Cousot gave an invited talk on [10].
- LSB: Jérôme Feret attended the 5th Workshop on Logic and Systems Biology (LSB 2014, Vienna, July 2014) and gave an invited talk on [16].
- NSAD: Mehdi Bouaziz, Tie Cheng, Arlen Cox, Antoine Miné, Xavier Rival, Antoine Toubhans and Caterina Urban attended the Workshop on Numerical and Symbolic Abstract Domains (NSAD 2014, München, Germany, September 2014).
- OCaml meetup: Mehdi Bouaziz attended the OCaml meetups (Paris, France, September and December 2014). Thibault Suzanne attended an OCaml meetup and gave a talk on “Implémentation d’une structure de données : Hash Array Mapped Tries”.
- POPL: Mehdi Bouaziz, Patrick Cousot, Radhia Cousot, Arlen Cox, Jérôme Feret, Antoine Miné, Xavier Rival and Caterina Urban attended the Symposium on Principles Of Programming Languages (POPL 2014, San Diego, USA); Xavier Rival chaired a session; Caterina Urban presented a poster.
- SAS: Mehdi Bouaziz, Tie Cheng, Patrick Cousot, Arlen Cox, Jérôme Feret, Antoine Miné, Xavier Rival, Antoine Toubhans, Caterina Urban, and Thibault Suzanne attended the Static Analysis Symposium (SAS 2014, München, Germany, September 2014); Xavier Rival chaired a session; Arlen Cox presented an article [14]; Antoine Toubhans presented an article [25]; Caterina Urban presented an article [26].
- SASB: Wassim Abou-Jaoudé and Jérôme Feret attended the Workshop on Static Analysis and Systems Biology (SASB 2014, München, Germany, September 2014). Jérôme Feret presented an article [16].
- TAPAS: Mehdi Bouaziz, Tie Cheng, Patrick Cousot, Arlen Cox, Antoine Miné, Xavier Rival, Antoine Toubhans and Caterina Urban attended the Workshop on Tools for Automatic Program Analysis (TAPAS 2014, München, Germany, September 2014).
- TYPES: Mehdi Bouaziz attended the Types 2014 meeting (TYPES 2014), Paris, France, May 2014).

VEMDP: Jérôme Feret attended the International Workshop on Verification of Engineered Molecular Devices and Programs (VEMDP 2014, Vienna, Austria, July 2014).

VMCAI: Mehdi Bouaziz, Patrick Cousot, Radhia Cousot, Arlen Cox, Jérôme Feret, Antoine Miné, Xavier Rival and Caterina Urban attended the Conference on Verification, Model-Checking and Abstract Interpretation (VMCAI 2014, San Diego, USA); Xavier Rival chaired the conference [32]; Jérôme Feret chaired a session; Antoine Miné presented an article [21].

WODES: Wassim Abou-Jaoudé attended the International Workshop on Discrete Event Systems (WODES 2014, Cachan, France, May 2014).

WST: Caterina Urban attended the 14th International Workshop on Termination and presented an article [30].

9.1.6. Seminars and talks

- Wassim Abou-Jaoudé gave some talks on “Logical modeling of T-helper cell differentiation and plasticity” [8] at Instituto Gulbenkian de Ciência (Oeiras, Portugal) in June 2014 and Max Planck Institute for Molecular Genetics (Berlin, Germany) in November 2014.
- Mehdi Bouaziz attended to the Dagstuhl Seminar on Next Generation Static Analysis Tools (Wadern, Germany) in August 2014 and gave two talks on “Introduction to Abstract Interpretation: static analysis and beyond” at the séminaire des doctorants du département d’informatique de l’École normale supérieure (ENS Paris, Paris, France) in November 2014, and at the Séminaire Francilien de Sûreté de Fonctionnement, (École Centrale Paris) in November 2014.
- Arlen Cox gave a talk on “HOO: Heap with Open Objects” at the Dagstuhl Seminar for Scripting Languages and Frameworks: Analysis and Verification (Wadem, Germany) in June 2014, a talk on “Statically Analyzing Object-Manipulating JavaScript Libraries without Client Code” at the Institute for Defense Analysis (Bowie, Maryland, USA) in September 2014, and talks on “JSAna with HOO: Automatically Verifying JavaScript Libraries without Client Code” at Facebook (London, U.K) in August 2014, at Cyberpoint Lab (Baltimore, Maryland, USA) in September 2014, at Apple (Cupertino, California, USA) in November 2014, at Draper Labs (Boston, Massachusetts, USA) in November 2014, and at MathWorks (Natick, Massachusetts, USA) in November 2014.
- Jérôme Feret gave a talk “An algebraic approach for inferring and using symmetries in rule-based models” at the Dagstuhl Seminar on Next Generation Static Analysis Tools (Wadern, Germany) in August 2014 and a talk on “Rule-Based Modeling” at the Dagstuhl Seminar on Multiscale Spatial Computational Systems Biology (Wadern, Germany) in November 2014
- Xavier Rival gave a talk “Towards precise and scalable static analyses” at the 54th IFIP WG 2.4 Group Meeting (Monterey, California, USA) in February 2014, a talk on “Verification of safety critical embedded software” at the Retraite du Département d’Informatique (Belleme, Normandie, France) in May 2014, talks on “Modular Construction of Shape-Numeric Analyzers” at Aarhus University (Aarhus, Denmark) in June 2014, at East China Normal University (Shanghai, China) in July 2014 and at Northern University for Defense Technology (Changsha, China) in July 2014, a talk on “Construction of abstract domains for heterogeneous memory properties” at the Dagstuhl Seminar on Next Generation Static Analysis Tools (Wadern, Germany) in August 2014, and a talk on “Type Verification of Spreadsheet Applications” at the 55th IFIP WG 2.4 Group Meeting (Stellenbosch, South Africa) in November 2014.
- Antoine Toubhans gave a talk on “Composite abstract domains for shape analysis” at the Seminar of the Gallium Group (Inria Paris-Rocquencourt), in September 2014.
- Antoine Miné gave a talk on “ A method to infer inductive numeric invariants inspired from Constraint Programming” at Decision Procedures and Abstract Interpretation (Dagstugh Seminar 14351) in August 2014, a seminar on “Mixing abstract interpretation and constraint programming techniques” at Laboratoire VERIMAG (Grenoble, France) in October 2014, a poster presentation on “The Astrée static analyzer” at Evaluating Software Verification Systems: Benchmarks and Competitions (Dagstugh Seminar 14171) in April 2014.

- Caterina Urban gave a seminar on “Proving Guarantee and Recurrence Temporal Properties by Abstract Interpretation” at University of Udine (Italy) in December 2014, a seminar on “Proving Guarantee and Recurrence Temporal Properties by Abstract Interpretation” at ETH Zurich in November 2014, a seminar “Automatic Inference of Ranking Functions by Abstract Interpretation” at Queen Mary University of London in October 2014, a talk on “Automatic Inference of Ranking Functions by Abstract Interpretation” at Dagstuhl Seminar 14352 “Next Generation Static Software Analysis Tools” in August 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at University College London in June 2014, a seminar on “An Abstract Domain to Infer Ordinal-Valued Ranking Functions” at Inria Rennes, Rennes in May 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at Séminaire du DI ENS in May 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at Inria Paris-Rocquencourt in March 2014, a seminar on “Automatic Inference of Ranking Functions by Abstract Interpretation” at IBM Thomas J. Watson Research Center in January 2014.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence:
 - Mehdi Bouaziz, Concepts Informatique (CI2), 22 ETD, L1, Université Paris-Diderot, Paris, France.
 - Mehdi Bouaziz, Intensive training in algorithmics, 35 ETD, Epita, Le Kremlin-Bicêtre, octobre-novembre 2014.
 - Mehdi Bouaziz, Preparation to the International Olympiad in Informatics, 40h ETD, Epita, Le Kremlin-Bicêtre, France.
 - Tie Cheng, Introduction to algorithmics, 36h ETD, L3, École Polytechnique, Palaiseau, France.
 - Jérôme Feret, and Caterina Urban, Mathematics, 40h ETD, L1, FDV Bachelor program (Frontiers in Life Sciences (FdV)), Université Paris-Descartes, France.
 - Antoine Miné and Xavier Rival, Semantics and applications to verification, 48h ETD, L3, École Normale Supérieure, Paris, France.
 - Xavier Rival, Introduction to static analysis, 8h, L3, École des Mines de Paris, Paris, France.
 - Xavier Rival, Introduction to algorithmics, 40h ETD, L3, École Polytechnique, Palaiseau, France.
 - Antoine Toubhans, Functional Analysis Class, 34h ETD, L2, Université Pierre et Marie Curie (UPMC), Paris, France.
 - Caterina Urban, Mathematics, 26.5h ETD, Bachelor Program “Frontières du Vivant”, Université Paris Descartes.
 - Thibault Suzanne, Introduction to Programming, 72h ETD, L1, Université Paris Diderot.
- Master:
 - Vincent Danos and Jérôme Feret (with Jean Krivine), Computational Biology, 20h ETD, M1. Interdisciplinary Approaches to Life Science (AIV), Master Program, Université Paris-Descartes, France.
 - Jérôme Feret, Antoine Miné, and Xavier Rival, Abstract Interpretation: application to verification and static analysis, 72h ETD, M2. Parisian Master of Research in Computer Science (MPRI). École normale supérieure. France.
 - Xavier Rival, Introduction to abstract interpretation, 8h, M1-M2, East China Normal University, Shanghai, China.

9.2.2. Supervision

PhD:

- Arlen Cox, Parametric heap abstraction for dynamic languages libraries, University of Colorado at Boulder (USA), 17 of November 2014, supervised jointly by Bor-Yuh Evan Chang (University of Colorado), Xavier Rival (École Normale Supérieure) and Sriram Sankaranarayana (University of Colorado).

PhD in progress:

- Mehdi Bouaziz, Static analysis of security properties by abstract interpretation. November 2011, Patrick Cousot and Jérôme Feret, École Normale Supérieure.
- Ferdinanda Camporesi, Abstraction of Quantitative Semantics of Rule-based models, January 2009, Radhia Cousot and Jérôme Feret (co-directed thesis with Maurizio Gabrielli, University of Bologna).
- Arlen Cox, Representing dynamic languages heaps using parametric, modular, container abstract domains, 2013, Xavier Rival, École Normale Supérieure, supervised jointly by Bor-Yuh Evan Chang (University of Colorado), Xavier Rival (École Normale Supérieure) and Sriram Sankaranarayana (University of Colorado).
- Tie Cheng, Static analysis of spreadsheet macros, October 2011, Xavier Rival, École Polytechnique.
- Vincent Laviron, Static Analysis of Functional Programs by Abstract Interpretation, October 2009, Patrick Cousot, École Normale Supérieure.
- Huisong Li, Static Analysis of Data-Structures with Sharing, November 2014, Xavier Rival, École Normale Supérieure
- Jiangchao Liu, Verification of the memory safety of a micro-kernel, December 2013, Xavier Rival, École Normale Supérieure
- Antoine Toubhans, Combination of shape abstract domains, October 2011, Xavier Rival, École Doctorale de Paris Centre
- Caterina Urban, Static Analysis of Functional Temporal Properties of Programs by Abstract Interpretation, November 2011, Radhia Cousot and Antoine Miné, École Normale Supérieure.
- Thibault Suzanne, Thread-modular static analysis of concurrent programs in the presence of weak memory models, October 2014, Antoine Miné, École Normale Supérieure.

9.2.3. Juries

Jérôme Feret was in the jury of the PhD thesis of Arlen Cox (17 of November 2014, University of Colorado, Boulder, USA). Jérôme Feret was reviewer of the PhD thesis of Peter Kreyßig (to be defended, Friedrich Schiller University, Jena, Germany).

Xavier Rival took part to the jury of the Habilitation Thesis of Francesco Zappa-Nardelli (16th of January 2014, ENS Paris) and to the jury of the Habilitation Thesis of Bertrand Jeannet (27 of March 2014, Université Joseph Fourier, Grenoble).

Antoine Miné is reviewer for the PhD thesis of Vivien Maisonneuve (École des Mines de Paris, February 2015). Antoine Miné was reviewer and in the jury of the PhD thesis of Julien Henry (Université de Grenoble, 13 October 2014).

9.3. Popularization

Mehdi Bouaziz gave a course on “Apprendre et enseignement — la programmation informatique des bibliothèques”, Maire de Paris, 12 hours, june-july 2014. Xavier Rival gave a talk on “Safety critical embedded softwares and their verification” at the Ceremony for the “Médailles of Engineering Sciences” in April 2014. Xavier Rival participated to the organization of the “Nuit des Sciences” in June 2014.

AOSTE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. general chair, scientific chair

- Julien Deantoni: GeMoc'2014 (workshop) [43]
- Marie-Agnès Peraldi-Frati: CIEL'2014 [35]

9.1.2. Scientific events selection

9.1.2.1. responsible of the conference program committee

- Laurent George: PC co-chair of 19th International Conference on Reliable Software Technologie - Ada-europe'2014, and of Workshop on Mixed Criticality for Industrial Systems (WMCIS'2014)

9.1.2.2. member of conference program committee

- Robert de Simone: EmSoft'2014, FDL'2014, Memocode'2014.
- Yves Sorel: RTNS 2014, DASIP 2014, EMSOFT 2014, ADA-Europe 2014
- Dumitru Potop Butucaru: Memocode'2014, ACSOFT 2014, EsISyn 2014
- Julien Deantoni: CIEL 2014, CAL 2014.

9.1.3. Journal

9.1.3.1. member of the editorial board

Yves Sorel: Traitement du Signal Journal

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 International, UNS.

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

Master: Yves Sorel, Optimization of distributed real-time embedded systems, 24H, M2, University Paris Sud

Master: Yves Sorel, Distributed real-time systems, 26H, M2, University Paris Est

Master: Yves Sorel, Specification and formal models for embedded systems, 28H, M2, ENSTA, Paris

Master: Yves Sorel, Correct by construction design of reactive systems, 18H, M2, ESIEE, Noisy-Le-Grand

Master : Julien Deantoni, Encadrement Projet en équipe, 31h, M1, Polytech'Nice

Master : Julien Deantoni, Encadrement Apprentissage, 8h, M1, Polytech'Nice

Master : Julien Deantoni, Architecture machine, 24h, niveau M1, Polytech'Nice, France.

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, Ingénierie Dirigée par les modèles par la pratique, 24h, M2, Polytech'Nice, France.

Master : Julien Deantoni, Ingénierie Dirigée par les modèles avancée, 9h, M2 Esprit Tunis, Tunisia.

Master: Dumitru Potop Butucaru, Une approche synchrone des systèmes embarqués temps réel, 12h, M1, EPITA Paris

Master: Dumitru Potop Butucaru and Thomas Carle, L'approche synchrone de la construction des systèmes embarqués temps réel, 12h, M2, Polytech Paris UPMC.

Licence: Laurent George, Java and Shell programming 48h, L1, IUT RT UPEC, France

Master: Laurent George, Distributed Real-Time Systems, 24h, M2, UPEC, 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, Architecture des ordinateurs, 45h, L3, UNS.

Master: Frédéric Mallet, Programmation Avancée et Design Patterns, 93h, M1, UNS.

Master: Frédéric Mallet, Java pour l'Informatique Industrielle, 24h, M1, UNS.

Master: Frédéric Mallet, Architectures des ordinateurs, 12h, M1, UNS.

Master: Frédéric Mallet, Formal Models for Network-On-Chips, 3h, M2, UNS.

9.2.2. Supervision

PhD in progress: Cristian Maxim, Probabilistic Real-Time Systems, University of UMPC-Paris-Sorbonne, co-supervised by Liliana Cucu-Grosjean with Benoit Triquet (Airbus)

PhD: Falou Ndoeye, Multiprocessor real-time scheduling taking into account preemption cost [19]; defended April 2014, supervised by Yves Sorel

PhD: Manel Djemal, *Reconciling performance and predictability on a NoC-based MPSoC using off-line scheduling techniques* [18], EDITE/UPMC, defended June 27th 2014, co-supervised by Alix Munier (UPMC/Lip6) and D. Potop-Butucaru.

PhD: Thomas Carle, *Efficient compilation of embedded control specifications with complex functional and non-functional properties* [16], EDITE/UPMC, defended Oct. 31st 2014, supervised by D. Potop-Butucaru.

PhD in progress: Salah Saidi, *Real-time scheduling for distributed simulation of numerical models*, University of UMPC-Paris-Sorbonne, co-supervised by Nicolas Pernet (IFPEN) and Yves Sorel

PhD in progress: Matias Vara-Larsen, *Toward a formal and hierarchical timed model for concurrent heterogeneous model*, UNS, started November 2012, supervised by Frédéric Mallet, co-supervised by Julien Deantoni.

PhD in progress: Ameni Khecharem, *High-Level modeling of hierarchical power management policies in SoCs*, UNS, started October 2012, supervised by Robert de Simone.

PhD in progress: Ying Lin, *Formal Analysis of polychronous models with MARTE/CCSL*, East China Normal University, started September 2011, supervised by Jing Liu (ECNU), co-supervised by Frédéric Mallet.

PhD in progress: Emilien Kofman, *Conception Haut Niveau Low Power d'objets mobiles communicants*, UNS, started Oct 2013, supervised by Robert de Simone, co-supervised by François Verdier (UMR CNRS/UNS LEAT).

PhD in progress: Amin Oueslati, *Modélisation conjointe d'applications et d'architectures parallèles embarqués en pratique*, UNS, started Jan 2014, supervised by Robert de Simone.

PhD in progress: Yann Bondue, *Towards formal multimodal languages*, UNS, started December 2014, supervised by Julien Deantoni.

9.2.3. Juries

- Robert de Simone: PhD examiner of Mariem Abdelmoula (UNS)
- Yves Sorel: PhD examiner of Philippe Thierry (University Paris Est)
- Laurent George: PhD reviewer of Georges-Arnaud KEMAYO (ENSMA Poitiers), Vincent LEGOUT (Telecom ParisTech) and Gurulingesh RARAVI (University of Porto).
- Liliana Cucu-Grosjean: PhD reviewer of Maxime CheraMy (University of Toulouse-INSA) and Vladimir-Alexandru Paun (Ecole Polytechnique, Paris)
- Dumitru Potop Butucaru: PhD examiner of Chan Ngo (Univ. Rennes 1)

ARAMIS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

O. Colliot acts as an expert for the World Health Organization (WHO) panel for setting research priorities in the field of dementia.

O. Colliot acts as an expert for the Canada Foundation for Innovation (CFI), Fonds National de la Recherche Scientifique (Belgium), Alzheimer Nederland, and the FCS Sciences et Technologies pour l'Aéronautique et l'Espace.

F. De Vico Fallani gave invited talk at the Workshop "Controversies in EEG source analysis" - Key Lab of Neuroinformation of the Ministry of Education, Chengdu, China (August 2014).

F. De Vico Fallani gave invited talk "6th Congress of Society Research Cerebellum", IRCCS Fondazione Santa Lucia, Rome, Italy (April 2014).

F. De Vico Fallani acts as an expert for the Research Foundation - Flanders, Belgium.

S. Durrleman acted as an expert for INdAM Fellowships in Mathematics cofounded with Marie Curie Actions and for ANEP (Spanish National Agency for Scientific Evaluation (ANEP)) CONEX Program

S. Durrleman gave an invited presentation at the workshop "comprendre et analyser les phénomènes temporels" of the conference RFIA (Reconnaissance des Formes et Intelligence Artificielle) Rouen, (July 2014)

S. Durrleman gave an invited presentation at the workshop "Statistical challenges in Neurosciences" at Warwick University, UK (September 2014)

S. Durrleman gave an invited presentation at the workshop "Spatiotemporal Image Analysis for Longitudinal and Time-Series Image Data" of the MICCAI Conference, Boston, USA (September 2014)

M. Chavez gave an invited presentation at the "Mediterranean School of Complex Networks" Salina, Italy (June 2014)

M. Chavez gave an invited seminar at the Universitat Pompeu Fabra, Barcelona, Spain (February 2014)

M. Chavez gave an invited seminar at the Universitat Politecnica de Catalunya, Terrasa, Spain (February 2014)

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

F. De Vico Fallani is publicity chair for the IEEE BIoMS Workshop, University "Roma TRE", Rome, Italy 2014

F. De Vico Fallani acted as chairman for 3rd congress of the Society for Research on the Cerebellum, IRCCS F. Santa Lucia, Rome, Italy 2014.

S. Durrleman was co-chair of the 2nd MICCAI Workshop on Deep Brain Stimulation Methodological Challenges (DBSMC), Boston, USA, 2014

S. Durrleman was co-chair of the 3rd International MICCAI Workshop on Spatiotemporal Image Analysis for Longitudinal and Time-Series Image Data (STIA), Boston, USA, 2014

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

D. Dormont is member of the board of the French Society for Neuroradiology.

S. Durrleman was member of the program committee of the 6th International Workshop on Biomedical Registration (WBIR), London, 2014

9.1.2.2. Reviewer

O. Colliot acted as a reviewer for the conference Medical Image Computing and Computer Aided Intervention (MICCAI) .

9.1.3. Journal

9.1.3.1. Member of the editorial board

O. Colliot was a member of the Editorial Board of the ISTE-Wiley-Hermes "Neural Engineering" book series.

9.1.3.2. Reviewer

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

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

F. De Vico Fallani acted as a reviewer for IEEE TBME, IEEE TNRSE, Hum Brain Mapp, Neuroimage, Plos Comp Bio, J Neurosci Meth, Brain Topography, Clin Neurophysiology, Plos One, Scientific Reports.

S. Durrleman acted as a reviewer for Medical Image Analysis, Neuroimage, IEEE Trans. Medical Imaging (TMI), IEEE Trans. Image Processing (TIP), Image and Vision Computing, International Journal of Computer Vision (IJCV), Annals of Applied Statistics, Journal of Computational and Applied Mathematics, SIAM Journal on Imaging Sciences, Journal of Alzheimer's disease.

M. Chavez acted this year as a reviewer for IEEE TBME, PLoS Comput Biol, PLoS One, J Royal Soc Interface, Phil Trans Royal Soc B, and Neurosc Behav Rev.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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

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

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

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

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

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

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

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

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

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

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

PhD school: Fabrizio De Vico Fallani, "Data analysis and modeling in cognitive and clinical neuroscience" - 3hours - Faculty of Psychology and Educational Sciences, Ghent, Belgium.

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

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

Engineering school: Dominique Hasboun, 3 hours, ENSEA

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

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

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

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

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

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

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

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

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

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

9.2.2. Supervision

PhD in progress : Claire Cury, Analyse statistique de la variabilité anatomique de l'hippocampe à partir de grandes populations, Université Pierre et Marie Curie, Started in 2011, advisor: Olivier Colliot

PhD in progress : Takoua Kaaouana, Détection automatique et analyse des micro-saignements cérébraux : Application à des séquences d'imagerie cliniques et à de grandes populations de sujets, Université Pierre et Marie Curie, Started in 2012, advisor: Didier Dormont, co-advisors: Marie Chupin, Ludovic de Rochefort

PhD in progress: Pietro Gori, Statistical analysis of neuronal connectivity in patients with Gilles de la Tourette syndrome based on anatomical structures extracted from both structural and diffusion images, Université Pierre et Marie Curie, Started in 2012, advisors: N. Ayache, O. Colliot and S. Durrleman

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

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

Visiting PhD student (Janvier - April 2014): Johann Heinz Martinez, Characterization of functional interactions between neural oscillations from EEG recordings, Universidad Politecnica de Madrid, Spain. Responsable: Mario Chavez

Visiting PhD student (September - November 2014): Anton Giulio Maglione, Functional brain connectivity during neuroaesthetics experimental paradigms, Universita Sapienza, Roma, Italy. Responsable: Mario Chavez

Master 2: Kevin Roussel, Morphométrie de la structure interne de l'hippocampe en IRM 7 Tesla, Université Pierre et Marie Curie, Mar-Sept 2014, advisor: Olivier Colliot

Master 2: Evgeny Zuenko, Segmentation des hypersignaux de la substance blanche chez le sujet âgé : amélioration de la méthode WHASA et évaluations sur plusieurs cohortes, Université Paris Sud, Mars-Aout 2014, advisor: Marie Chupin

Master 2: Kanza Dekkiche, Cartographie de susceptibilité magnétique (CSM): Optimisation et comparaison entre méthodes sur des données multicentriques, Université Nice Sophia Antipolis, Mar-Aout 2014, advisor: Marie Chupin

End-of-course internship: Maxime Corduant, Interface graphique interactive pour la segmentation automatisée des sous régions de l'hippocampe humain in-vivo en IRM à très hauts champs, ENSIIE, Mar-Sept 2014, advisor: Marie Chupin

End-of-course internship: Fanny Gosselin, MATLAB graphical interface for statistical analysis of physiological recordings from monitoring of human respiratory states, Université Paris Est Créteil Val-de-Marne, March - August 2014, advisor: Mario Chavez

End-of-course internship: Guillaume Ruffin, Utilisation de la géométrie Riemannienne pour la caractérisation de la dynamique épileptique chez l'homme, Université Paris Est Créteil Val-de-Marne, March - August 2014, advisor: Mario Chavez

End-of-course internship: Antoine Latrille, Données Syndromiques et Forçages Climatiques en Epidémiologie, ESIEE-Paris, March - August 2014, advisor: Mario Chavez

9.2.3. Juries

Olivier Colliot participated, as referee, to the PhD committee of Jonathan Young (University College London), 2014 (supervisors: Sébastien Ourselin and John Ashburner).

Olivier Colliot participated, as examiner, to the PhD committee of Pierre Besson (Université de Lille), 2014 (supervisor: Louise Tyvaert).

Olivier Colliot participated, as examiner, to the PhD committee of Hao Xu (Ecole Polytechnique), 2014 (supervisors: Stéphanie Allassonnière and Bertrand Thirion).

Fabrizio De Vico Fallani participated, as referee, to the PhD committee of Jonas Chatel-Goldman (Université de Grenoble), 2014 (supervisor: Marco Congedo, Jean-Luc Schwartz and Christian Jutten).

Fabrizio De Vico Fallani participated, as examiner, to the PhD committee of Aude Costard (Université de Grenoble), 2014 (supervisor: Olivier Michel, Patrice Arby, Sophie Achard and Pierre Borgnat).

Fabrizio De Vico Fallani participated, as referee, to the PhD committee of Guillame Lio (Université de Lyon 1), 2014 (supervisor: Philippe Boulinguez).

Stanley Durrleman participated, as examiner, to the PhD defense of J. Fishbaugh (University of Utah), 2014 (supervisor: Guido Gerig).

Mario Chavez participated, as referee, to the PhD committee of Alessio Cardillo (Universidad de Zaragoza, Saragose, Spain), 2014 (supervisor: Jesus Gardenes).

Mario Chavez participated, as referee, to the PhD committee of Rafael Romero-Garcia (Universidad Pablo de Olavide, Seville, Spain), 2014 (supervisor: Jose Luis Cantero).

9.3. Popularization

The team is involved in the BrainCatalogue project (coordinator: Roberto Toro, Institut Pasteur) dedicated to the popularization of neuroanatomical knowledge. The project features MRI scans and 3D reconstructions for various vertebrates species (bear, mouse, macaque, dolphin, leopard, rhinoceros, human, squirrel ...).

The team coordinates the activity of the FreeBorn consortium which aims at promoting the interaction and visibility of the French research teams working on brain connectivity and network theory: <https://sites.google.com/site/fr2eborn/>

CASCADE Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Organisation

7.1.1.1. Organisation of Events

- a weekly seminar is organized: <http://www.di.ens.fr/CryptoSeminaire.html>

7.1.1.2. Steering Committees of International Conferences

- steering committee of CANS: David Pointcheval
- steering committee of PKC: David Pointcheval, David Naccache
- steering committee of FDTC: David Naccache (chair)
- steering committee of PROOFS: David Naccache
- steering committee of LATINCRYPT: Michel Abdalla (chair)
- steering committee of PAIRING: Michel Abdalla

7.1.1.3. Board of International Organisations

- Board of the *International Association for Cryptologic Research* (IACR): Michel Abdalla (2013 – 2015), David Pointcheval (2008–2016)

7.1.2. Scientific Events Selection

7.1.2.1. Program Committee Chair

- Africacrypt – 28-30 May (Marrakesh, Morocco): David Pointcheval, Damien Vergnaud
- WISTP – 30 June-2 July (Heraklion, Greece): David Naccache
- SCN – 3-5 September (Amalfi, Italy): Michel Abdalla

7.1.2.2. Program Committee Member

- CS2 – 20 January (Amsterdam, Netherlands): David Naccache
- WAHC – 7 March (Rockley, Christ Church, Barbados, West Indies): David Naccache
- PKC – 26-28 March (Buenos Aires, Argentina): Michel Abdalla, Vadim Lyubashevsky
- POST – 5-13 April (Grenoble, France): David Pointcheval
- HOST – 6-7 May (Austin, TX, USA): David Naccache
- ECSaR – 27-31 May (Stanford, USA): David Naccache
- ASIACCS – 3-6 June (Kyoto, Japan): David Naccache
- HASP – 15 June (Minneapolis, MN, USA): David Naccache
- WISTP – 30 June-2 July (Heraklion, Greece): David Pointcheval
- NFSP – 3 July (Madrid, Spain): David Naccache
- IWSEC – 27-29 August (Hirosaki, Japan): Damien Vergnaud
- SCN – 3-5 September (Amalfi, Italy): Damien Vergnaud
- ESORICS – 7-11 September (Wroclaw, Poland): David Naccache
- LATINCRYPT – 17-19 September (Florianopolis, Brazil): Michel Abdalla
- ICDF2C – 18-20 September (Seoul, South Korea): David Naccache
- PQC – 1-3 October (Waterloo, Canada): Vadim Lyubashevsky

- SPACE – 18-22 October (Pune, India): David Naccache
- CANS – 22-24 October (Heraklion, Greece): Itai Dinur
- WNCS – 7-9 November (Dubai, UAE): David Naccache
- PriSec – 3-5 December (Sydney, Australia): David Naccache
- Botconf – 3-5 December (Paris, France): David Naccache
- ASIACRYPT – 7-11 December (Kaoshiung, Taiwan): Itai Dinur
- Indocrypt – 14-17 December (New Delhi, India): David Naccache
- INTRUST – 16-17 December (Beijing, China): David Naccache

7.1.3. Editorial Boards of Journals

Editor-in-Chief

- of the *International Journal of Applied Cryptography (IJACT)* – Inderscience Publishers: David Pointcheval

Associate Editor

- of *Security and Communication Networks*: David Naccache (editor)
- of *Journal of Cryptographic Engineering*: David Naccache (editor)
- of *Encyclopedia of Cryptography and Security*: David Naccache (editor)
- of *Journal of Computer Security, IOS Press*: David Naccache
- of *Open Journal of Information Security and Applications, SOP*: David Naccache (editor)
- of *Cryptologia* – Taylor & Francis: David Naccache (editor)
- of *Computers & Security* – Elsevier: David Naccache
- of *Information Processing Letters* – Elsevier: David Pointcheval
- of *IEEE Transactions on Information Forensics and Security*: Michel Abdalla
- of *IET Information Security*: Michel Abdalla

Columnist (in charge of the bi-monthly CryptoCorner)

- of the *IEEE Security and Privacy Magazine*: David Naccache

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

- Licence: David Naccache, Introduction to computer science, L1, Univ. Paris II
- Master: David Naccache, Scientific programming through practice, M1, ENS
- Master: David Naccache, Jacques Stern, Damien Vergnaud, Introduction to Cryptology, M1, ENS
- Master: Michel Abdalla, David Pointcheval, Vadim Lyubashevsky, Cryptography, M2, MPRI
- Master: Damien Vergnaud, Advanced Algebra and Applications to Cryptography, Ecole Centrale Paris
- Master: Hoeteck Wee, Randomness in Complexity, M2, MPRI
- Master: David Naccache, Computer Security, M2, Univ. Paris II
- Master: David Naccache, Computer Security, M2, Beijing Jiaotong University
- Master: David Naccache, Risk Management, M2, Univ. Paris II
- Master: David Naccache, Computer Forensics, M2, Univ. Paris II
- Master: David Naccache, Computer Security, M2, University of Luxembourg
- Master: David Pointcheval, Cryptography, M2, ESIEA

7.2.2. Supervision

- PhD: Tancrède Lepoint, Design and Implementation of Lattice-Based Cryptography, ENS, June 30th, 2014, David Pointcheval
- PhD in progress: Sylvain Ruhault, Randomness in cryptography, from 2011, David Pointcheval & Damien Vergnaud
- PhD in progress: Sonia Belaid, Leakage-resilient cryptography, from 2012, Michel Abdalla
- PhD in progress: Fabrice Ben Hamouda, Leakage of information in cryptography, from 2012, Michel Abdalla & David Pointcheval
- PhD in progress: Diana Maimut, Fully Homomorphic Encryption, from 2012, David Naccache
- PhD in progress: Thomas Prest, Lattice-based cryptography, from 2012, Vadim Lyubashevsky & David Pointcheval
- PhD in progress: Olivier Sanders, Delegation of computations, from 2012, David Pointcheval
- PhD in progress: Jérémie Clément, Lightweight cryptography, from 2013, David Naccache
- PhD in progress: Simon Cogliani, Authenticated Encryption, from 2013, David Naccache
- PhD in progress: Mario Cornejo, Security for the cloud, from 2013, Michel Abdalla
- PhD in progress: Houda Ferradi, Biometric protocols and mobile security, from 2013, David Naccache
- PhD in progress: Alain Passelègue, Security against related-key attacks, from 2013, Michel Abdalla
- PhD in progress: Adrian Thillard, Counter-measures against side-channel attacks and secure multi-party computation, from 2013, Damien Vergnaud
- PhD in progress: Florian Bourse, Encryption Schemes for the Cloud, from 2014, Michel Abdalla & David Pointcheval
- PhD in progress: Geoffroy Couteau, Efficient secure two-party computation for the Cloud, from 2014, David Pointcheval & Hoeteck Wee
- PhD in progress: Rafael Del Pino, Lattice-Based Cryptography – Complexity and Ideal-Lattices, from 2014, Vadim Lyubashevsky
- PhD in progress: Rémi Géraud, Provable security in public-key cryptography, from 2014, David Naccache
- PhD in progress: Pierrick Meaux, Lattice-Based Cryptography – Advanced Features, from 2014, Vadim Lyubashevsky

7.2.3. Juries

- PhD Robert Künnemann. *On the Analysis of Security APIs and Stateful Protocols* – ENS Cachan – France, January 7th 2014: David Pointcheval
- HdR Emmanuel Prouff. *Analyse des Attaques par Canaux Auxiliaires et Preuves de Sécurité* – Université Pierre et Marie Curie, Paris – France, January 27th 2014: David Pointcheval
- PhD Thomas Peters. *Privacy Enhancing Cryptographic Mechanisms with Public Verifiability* – Université Catholique de Louvain – Belgium, April 2nd 2014: David Pointcheval
- PhD Alain Patey. *Techniques cryptographiques pour l'authentification et l'identification biométriques respectant la vie privée* – Telecom ParisTech – France, May 20th 2014: David Pointcheval (Chair)
- PhD Susan Thomson. *Public-Key Cryptography with Joint and Related-Key Security* – ENS – France, June 18th 2014: Michel Abdalla (Examiner)
- PhD Tancrède Lepoint. *Design and Implementation of Lattice-Based Cryptography* – ENS – France, June 30th 2014: David Naccache, David Pointcheval (Supervisor)

- HdR Damien Vergnaud. *Primitives et constructions en cryptographie asymétrique* – Ecole Normale Supérieure – France, July 1st 2014: Michel Abdalla, David Pointcheval
- PhD Slim Bettaieb. *Signature et identification pour l'anonymat, basées sur les réseaux* – Université de Limoges – France, September 26th 2014: Damien Vergnaud (Reviewer)
- PhD Adeline Langlois. *Lattice-Based Cryptography: Security Foundations and Constructions* – ENS Lyon – France, October 17 2014: Vadim Lyubashevsky (Jury member)
- HdR: Duong Hieu Phan. *Some Advances in Broadcast Encryption and Traitor Tracing* – Ecole Normale Supérieure – France, November 19th 2014: Michel Abdalla, David Pointcheval (Supervisor)
- PhD Cédric Murdica. *Sécurité Physique de la Cryptographie sur Courbes Elliptiques* – Télécom ParisTech – France, February 13th 2014: David Naccache (Supervisor)
- PhD Thomas Souvignet. *L'expertise et la lutte contre la fraude monétaire* Université Panthéon-Assas Paris 2 – France, December 18th 2014: David Naccache (Supervisor)
- PhD Jean-Michel Cioranescu. *Nouvelles contre-mesures pour la protection de circuit intégrés* – Université Panthéon-Sorbonne Paris 1 – France, December 18th 2014: David Naccache (Supervisor)
- PhD Guillaume Bouffard. *A Generic Approach for Protecting Java Card Smart Card Against Software Attacks* Université de Limoges – France, October 10th 2014: David Naccache (Reviewer)
- PhD Emmanuel Volte. *Miroirs, cubes et Feistel dissymétrique* – Université Cergy-Pontoise – France, November 28th 2014: David Pointcheval (Chair)
- PhD Rodolphe Lampe. *Preuves de sécurité en cryptographie symétrique à l'aide de la technique du coupling* – Université de Versailles Saint-Quentin en Yvelines – France, December 2nd 2014: David Pointcheval, David Naccache (Reviewer)

CLASSIC Project-Team

6. Dissemination

6.1. Teaching - Supervision - Juries

6.1.1. Teaching

E-learning

Visio-conferencing at IFCAM (Indo-French Centre for Applied Mathematics), Summer School on Applied Mathematics, Indian Institute of Science, Bangalore (July 2014). Olivier Catoni gave a three hour presentation on PAC-Bayes bounds applied to statistical learning. The conference is still available on the author's web page.

6.1.2. Supervision

- PhD : Thomas Mainguy, Markov Substitute Processes, a statistical model for linguistics, Université Pierre et Marie Curie, supervised by par Olivier Catoni, (defended on December 11, 2014).
- PhD in progress : Iliaria Giulini, data analysis in high dimension, started in September 2012, Olivier Catoni.

CLIME Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

- Marc Bocquet is a member of the INSU/LEFE MANU scientific committee.
- Marc Bocquet is a member of the Scientific Council of the CERFACS institute in Toulouse, France.
- Marc Bocquet is a member of the selection committee of the Prix André Prud'homme of Météo et Climat (Société Météorologique de France).
- Isabelle Herlin is a member of the Scientific Council of CSFRS (High Council for Strategic Education and Research in France).
- Isabelle Herlin is a member of the program committee of DIGITEO, french research cluster in science and technology of information.
- Isabelle Herlin is a member of the Scientific Council of OSU-EFLUVE.
- Isabelle Herlin is a member of the Evaluation Committee at Inria.
- Isabelle Herlin is a member of the AERES Evaluation Committee of LISTIC.

9.1.1. Scientific events organisation

9.1.1.1. general chair, scientific chair

- Marc Bocquet: Ensemble session, Colloque national sur l'assimilation de données LEFE-MANU, Toulouse, 1-3 December 2014.

9.1.1.2. member of the organizing committee

- Vivien Mallet: seminar on "Uncertainty quantification and ensemble-based methods for geosciences", École normale supérieure, Paris, January 2014.

9.1.2. Scientific events selection

9.1.2.1. reviewer

- Isabelle Herlin: European Conference on Computer Vision (ECCV)
- Isabelle Herlin: International Conference on Image Processing (ICIP).

9.1.3. Journal

9.1.3.1. member of the editorial board

- Marc Bocquet is Associate Editor of the Quarterly Journal of the Royal Meteorological Society.

9.1.3.2. reviewer

- Vivien Mallet: Atmospheric Chemistry and Physics.
- Vivien Mallet: Environmental Modeling & Software.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master OACOS/WAPE: Marc Bocquet, Vivien Mallet, Jean-Matthieu Haussaire; Introduction to Data Assimilation for Geophysics; 30 hours; M2; UPMC, X, ENS, ENSTA ParisTech, École des Ponts ParisTech; France.

Master "Nuclear Energy": Marc Bocquet, Vivien Mallet, Jean-Matthieu Haussaire; 12 hours; M2; École des Ponts ParisTech, Centrale Paris, INSTN; France.

Master SGE and 3rd-year class at École des Ponts ParisTech: Vivien Mallet; Air quality modeling; 9h; M2; Universities Paris Diderot- Paris 7, Paris 12 and École des Ponts ParisTech, France.

Training: Vivien Mallet; Uncertainty Quantification: Ensembles and Data Assimilation – Application to Climate and Geosciences; 5.25 hours; CERFACS; France.

9.2.2. Supervision

PhD in progress : Paul Baudin, “Agrégation séquentielle de prédicteurs appliquée à la prévision de la qualité de l’air”, September 2012, Vivien Mallet and Gilles Stoltz.

PhD in progress: Ruiwei Chen, “Quantification d’incertitude en simulation des émissions du trafic routier”, November 2014, Vivien Mallet.

PhD in progress : Jean-Matthieu Haussaire, “Méthodes variationnelles d’ensemble pour la modélisation inverse en géosciences. Application au transport et la chimie atmosphérique”, University Paris-Est, October 2013, Marc Bocquet.

PhD in progress : Yann Lepoittevin, “Tracking of image structures”, University Paris Centre, October 2012, Isabelle Herlin.

PhD in progress : Jean Thorey, “Prévision d’ensemble du rayonnement solaire pour la production photovoltaïque du parc EDF”, November 2013, Vivien Mallet.

PhD in progress: Raphaël Ventura, “Simulation numérique de la ville par couplage entre la modélisation et l’observation”, September 2014, Vivien Mallet.

9.2.3. Juries

- Marc Bocquet, member, PhD thesis, Victor Winiarek, “Dispersion atmosphérique et modélisation inverse pour la reconstruction de sources accidentelles de polluants”, 4 March 2014, University Paris-Est, Champs-sur-Marne, France.
- Marc Bocquet, reviewer, PhD thesis, Benjamin Ménétrier “Utilisation d’une assimilation d’ensemble pour modéliser des covariances d’erreur d’ébauche dépendantes de la situation météorologique à l’échelle convective”, University Toulouse, 3 July 2014, Toulouse, France.
- Marc Bocquet, reviewer and chair, PhD thesis, Nabil BenSalem, “Modélisation directe et inverse de la dispersion atmosphérique en milieux complexes”, École centrale de Lyon, 17 septembre 2014, Lyon, France.
- Marc Bocquet, member, PhD thesis, Vincent Loizeau, “La prise en compte d’un modèle de sol multi-couches pour la modélisation multi-milieux à l’échelle européenne des polluants organiques persistants”, 20 November 2014, University Paris-Est, Champs-sur-Marne, France.
- Marc Bocquet, member, PhD thesis, Yin Yang, “Study of Variational Ensemble Methods for Image Assimilation”, University Rennes 1, 16 December 2014, Rennes, France.
- Marc Bocquet, reviewer, PhD thesis, Antoine Berchet, “Quantification des émissions de méthane en sibérie par inversion atmosphérique à la méso-échelle”, University Versailles Saint-Quentin-en-Yvelines, 19 December 2014, Paris, France.
- Isabelle Herlin, reviewer, Hector Simon Benavides Pinjosovsky, PhD thesis, “Assimilation variationnelle des données dans le modèle de surface continentale ORCHIDEE grâce au logiciel YAO”, University Pierre and Marie Curie, 27 March 2014, Paris, France.

9.3. Popularization

- Marc Bocquet wrote a paper on “La prévision numérique du temps” in the journal “Revue de Technologie” meant for the teachers of vocational technical education.
- Victor Winiarek and Marc Bocquet wrote an internet contribution “de la radioactivité dans l’air”, which was published in the general audience book “Brève de maths”, Nouveau Monde éditions, Paris, 2014.

- Marc Bocquet and Mohammad Reza Koohkan wrote an internet contribution “Quand modèles numériques et mesures ne sont pas sur la même longueur d’onde”, which was also published in “Brève de maths”.
- Vivien Mallet took part to a one-day introduction to Inria research at Assemblée Nationale, as organized by the group “Internet et société numérique”.
- Vivien Mallet introduced data assimilation at urban scale during the “rencontre Inria-industry” organized during the Futur-en-Seine digital festival.

CRYPT Team

6. Dissemination

6.1. Promoting Scientific Activities

6.1.1. Scientific events organisation

6.1.1.1. General chair, scientific chair

- Xiaoyun Wang was General Chair of the 10th China International Conference on Information Security and Cryptology (Inscrypt 2014) in Beijing (China), from December 13 to 15, 2014.

6.1.1.2. Member of the organizing committee

- Phong Nguyen was an organizer of the LIAMA France-China 50 Workshop, in May 2014, in Paris (France).

6.1.2. Scientific events selection

6.1.2.1. Chair of conference program committee

- the 33rd IACR Eurocrypt Conference (EUROCRYPT 2014) [22]: Phong Nguyen.

6.1.2.2. Member of the conference program committee

- Eleventh Algorithmic Number Theory Symposium ANTS-XI (August 6 ? 11, 2014, Korea): Phong Nguyen.

6.1.2.3. Reviewer

The members of the team reviewed numerous papers for numerous international conferences.

6.1.3. Journal

6.1.3.1. Member of the editorial board

- Advances in Mathematics of Communications: Xiaoyun Wang
- Journal of Cryptology: Phong Nguyen and Xiaoyun Wang
- Journal of Mathematical Cryptology: Phong Nguyen
- Natural Science Review: Xiaoyun Wang

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

PhD: Phong Nguyen, Advanced Lattice Algorithms, 12h, CAS, China.

PhD: Phong Nguyen, Introduction to Lattice Algorithms, 3h, EPFL Winter School, Switzerland.

6.2.2. Supervision

PhD: Wei Wei, New Transference Theorems on Lattices Possessing Gaps, Tsinghua, June 2014, Xiaoyun Wang

PhD: Feng Zhang, Theory, Algorithm and Applications for Solving SVP and CVP in Lattices, CAS, Summer 2014, Yanbin Pan

6.2.3. Juries

PhD: Wei Wei, New Transference Theorems on Lattices Possessing Gaps, Tsinghua, June 2014, Xiaoyun Wang (supervisor)

PhD: Chenggang Wu, Property Testing and Related Problems, Tsinghua (Institute for Interdisciplinary Information Sciences), June 2014, Phong Nguyen (Jury member)

PhD: Feng Zhang, Theory, Algorithm and Applications for Solving SVP and CVP in Lattices, CAS, Summer 2014, Yanbin Pan (supervisor)

6.3. Popularization

Phong Nguyen gave several invited talks:

- [17] at the First NTU-VIASM Workshop on Discrete Mathematics, in Vietnam.
- at the 2014 CTIC-IIS Theory of Cryptography workshop, in China.
- at the Mathematical Workshop of the Chinese Association for Cryptologic Research, in China.

DEDUCTEAM Exploratory Action

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

Catherine Dubois was a general chair of the GDR GPL national days, and the AFADL'14, CAL'14, and CIEL'14 conferences, organized at *Cnam* in Paris.

8.1.1.2. Member of the organizing committee

David Delahaye was a member of the organizing committee of the GDR GPL national days, and the AFADL'14, CAL'14, and CIEL'14 conferences, organized at *Cnam* in Paris.

Olivier Hermant and Florian Rabe organized the 2nd KWARC-Deducteam workshop in Bremen, Germany (May 2014).

Gilles Dowek is a member of the steering committees of RTA and TLCA. Catherine Dubois is the chair of the steering committee of TAP.

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committee

Gilles Dowek has been the PC chair of RTA-TLCA.

David Delahaye and Catherine Dubois were co-chairs of the SETS'14 workshop (affiliated to ABZ'14).

David Delahaye was a co-chair of the $\forall X.XII$ '14 workshop (affiliated to VSL'14).

Catherine Dubois was a co-chair of the F-IDE'14 workshop (affiliated to ETAPS'14). She was also a PC co-chair of the AFADL'2014 national conference.

8.1.2.2. Member of the conference program committee

Olivier Hermant was member of the program committee of the RTA-TLCA 2014 conference (July 2014).

8.1.2.3. Reviewer

Frédéric Blanqui reviewed a paper submitted to the post-proceedings of TYPES'14.

Alejandro Díaz-Caro reviewed a paper submitted to the FSTTCS'14 conference.

Ronan Saillard reviewed a paper submitted to the RTA'14 conference.

8.1.3. Journal

8.1.3.1. Member of the editorial board

David Delahaye is a member of the editorial board of the Global Journal of Advanced Software Engineering (GJASE).

8.1.3.2. Reviewer

David Delahaye reviewed one paper for the Global Journal of Advanced Software Engineering (GJASE) and one paper for the Requirements Engineering (RE) journal.

Alejandro Díaz-Caro reviewed a paper submitted to Elsevier's "Science of Computer Programming" journal.

Olivier Hermant reviewed a paper submitted to the journal "Theoretical Computer Science".

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

CPGE: Simon Cruanes, Mathématiques-Informatiques en MPSI, 64 HETD, MPSI, Lycée Saint-Louis, France.

Licence : Raphaël Cauderlier, Eléments de programmation 2, 63 HETD, L1, UPMC, France.

Licence: Ali Assaf, Algorithmique et programmation, 36 HETD, L3, Ecole Polytechnique, France.

Licence: Ali Assaf, Les bases de la programmation et de l'algorithmique, 36 HETD, L3, Ecole Polytechnique, France.

Licence : Alejandro Díaz-Caro, Mathématiques 2, 18 HETD, L1, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Méthodologie de la mesure en sciences humaines, 48 HETD, L1, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Statistiques et probabilités, 18 HETD, L2, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Probabilités, 36 HETD, L2, Université Paris-Ouest Nanterre La Défense, France.

Licence : Alejandro Díaz-Caro, Probabilités, 36 HETD, L2, Université Paris-Ouest Nanterre La Défense, France.

Licence: Ronan Saillard, Programmation Orientée Objet en Java, 27 HETD, Telecom ParisTech, France.

Licence: Guillaume Burel, Programmation avancée, 25.5 HETD, L3, ENSIIE, France

Licence: Guillaume Burel, Logique, 10.5 HETD, L3, ENSIIE, France

Licence: Guillaume Burel, Projet informatique, 22.75 HETD, L3, ENSIIE, France

Master: Guillaume Burel, Systèmes et langages formels, 17.5 HETD, M1, ENSIIE, France

Master: Guillaume Burel, Compilation, 33.25 HETD, M1, ENSIIE, France

Licence: Guillaume Burel is in charge of the 4th, 5th, and 6th semesters of the engineering degree at ENSIIE.

Licence: Pierre Halmagrand, Initiation à la Programmation en JAVA, 48.75 HETD, L1, CNAM, France

Master: Pierre Halmagrand, Initiation à la Méthode B, 53.7 HETD, M2, CNAM, France

Master: Gilles Dowek has given invited classes at Supelec, Centrale, INSA-Lyon.

8.2.2. Supervision

PhD : Kim-Quyen Ly, Automated verification of termination certificates [11], University Joseph Fourier, Grenoble, 9 October 2014, Jean-François Monin and Frédéric Blanqui.

PhD in progress : Ronan Saillard, Systèmes de Types Modulo, Oct 2012, Olivier Hermant and Pierre Jouvelot.

PhD in progress : Pierre Halmagrand, “Automated Deduction Modulo”, from Oct. 2013, David Delahaye, Olivier Hermant, and Damien Doligez.

PhD in progress : Guillaume Bury, “SMT Modulo”, Oct. 2014, David Delahaye.

PhD in progress : Ali Assaf, Interoperability of Proof Systems, Oct. 2012, Gilles Dowek and Guillaume Burel.

PhD in progress : Simon Cruanes, Automated reasoning modulo theories, August 2012, Gilles Dowek and Guillaume Burel.

PhD in progress : Kailiang Ji, Model Checking and Automated Theorem Proving, October 2012, Gilles Dowek.

8.2.3. Juries

David Delahaye reviewed the PhD thesis of Hernán Vanzetto, supervised by Stephan Merz and Kaustuv Chaudhuri, and defended in Dec. 2014 in Nancy.

David Delahaye was part of the HDR jury of Stéphane Lengrand, defended in Dec. 2014 at École Polytechnique in Palaiseau.

Gilles Dowek has been part of the HDR committee of Philippe Malbos.

Catherine Dubois reviewed the HDR thesis of Oum-El-Kheir Aktouf, defended in July 2014 in Valence.

8.3. Popularization

Gilles Dowek is the president of the scientific board of the “Société Informatique de France” (SIF).

Gilles Dowek is a member of the scientific board of “La Main à la Pâte”.

Raphaël Cauderlier, Simon Cruanes, Pierre Halmagrand et Ronan Saillard ont participé à l’animation du stand Inria au Salon Culture et Jeux Mathématiques les 24 et 25 mai

Ali Asaf, Raphaël Cauderlier, Simon Cruanes et Pierre Halmagrand ont participé à l’animation du stand Inria lors de la Fête de la Science les 9 et 10 octobre 2014 à Paris

Gilles Dowek has given a talk at Mathenjeans.

Alejandro Díaz-Caro is member of the scientific board of “Ensemble”, a journal of the Maison Argentina at Cité Universitaire in Paris, ISSN 1852–5911.

DYOGENE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events selection

9.1.1.1. Chair of conference program committee

Marc Lelarge: ACM Sigmetrics TPC co-chair

9.1.1.2. Member of the conference program committee

Ana Bušić: IFIP Performance, Valuetools, IEEE SmartGridComm

Marc Lelarge: ESA, WiOpt, WEIS

9.1.1.3. Reviewer

The members of the team have served as reviewers for numerous international conferences.

9.1.2. Journal

9.1.2.1. Member of the editorial board

Marc Lelarge: IEEE's Transactions on Network Science and Engineering, Bernoulli Journal, Queueing Systems.

9.1.2.2. Reviewer

The members of the team reviewed numerous papers for numerous international journals.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : Anne Bouillard (Cours) et Thomas Nowak (TD) *Structures et algorithmes aléatoires* 80heqTD, L3, ENS, France.

Licence : Marc Lelarge (Cours) et Anne Bouillard (TD) *Théorie de l'information et du codage* 50heqTD, L3, ENS, France.

Master : Bartek Błaszczysz (with Laurent Massoulié), *Graduate Course on point processes, stochastic geometry and random graphs* (program "Master de Sciences et Technologies"), 45h, UPMC, Paris 6, France.

Master : Bartek Błaszczysz (with Laurent Decreusefond), *Graduate Course on Spatial Stochastic Modeling of Wireless Networks* (master program "Advanced Communication Networks), 45h, l'X and Telecom ParisTech, Paris.

Master : Anne Bouillard (Cours + TD) *Graphes aléatoires* 18heqTD, M1, ENS Cachan, France.

Master : Ana Bušić and Florian Simatos *Modèles et algorithmes de réseaux*, 50heqTD, M1, ENS, Paris, France.

Master: Ana Bušić, *Foundations of network models*, 18heqTD, M2, MPRI, France.

Licence : Marc Lelarge, *Théorie de l'information et codage*, 40h, L3, ENS, Paris, France.

Master : Marc Lelarge, *Algorithms for Networked Information*, 40h, M2, Ecole Polytechnique, France.

Doctorat : Francois Baccelli, *Stochastic Geometry*, Essen Lectures 2014 (May 12-16), Uppsala University, Sweden, <http://www.math.uu.se/Esse/EsseLectures2014/>.

9.2.2. Supervision

HdR : Anne Bouillard, *Algorithms and efficiency of Network Calculus* [1], ENS (Paris), 8 April 2014

PhD in progress :

- Kumar Gaurav, *Convex comparison of network architectures*, started in October 2011, advisor B. Blaszczyszyn;
- Miodrag Jovanović, *Evaluation and optimization of the quality perceived by mobile users for new services in cellular networks*, started in January 2012, advisor B. Blaszczyszyn, co-advisor M.Karray;
- Christelle Rovetta, *Applications of perfect sampling to queuing networks and random generation of combinatorial objects*, from December 2013, co-advised by Anne Bouillard and Ana Bušić.

9.2.3. Juries

- B. Blaszczyszyn was a reviewer of the PhD thesis of Andres Altieri [Supelec]
- M. Lelarge: External Examiner for PhD: Jiaming Xu (UIUC) 2014.
- M. Lelarge: membre du jury de recrutement CR2 Inria Paris-Rocquencourt.

GALLIUM Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committee

Maxime Dénès was member of the organizing committee for the First International Workshop on Coq for Programming Languages (**CoqPL 2015**), co-located with POPL'15 in Mumbai, India.

9.1.2. Scientific events selection

9.1.2.1. Chair of the conference program committee

Xavier Leroy co-chaired the program committee of the ACM SIGPLAN 2015 conference on Certified Proofs and Programs (**CPP'15**), which will take place in January 2015 in Mumbai, India, colocated with POPL'15.

9.1.2.2. Member of the conference program committee

- **ALENEX 2015** (Algorithm Engineering & Experiments): Umut Acar was a member of the program committee.
- **ECOOP 2014** (European Conference on Object-Oriented Programming): Mike Rainey was a member of the artefact evaluation committee.
- **ESOP 2015** (European Symposium on Programming): Umut Acar was a member of the program committee.
- **Eurosys 2015** (European Conference on Systems Research and Development): Pierre-Évariste Dagand was a member of the shadow program committee.
- **POPL 2015** (42nd ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages): Umut Acar and François Pottier were members of the program committee; Xavier Leroy was a member of the external review committee.
- **CoqPL 2015** (Workshop on Coq for Programming Languages): Maxime Dénès and Xavier Leroy were members of the program committee.
- **MLW 2015** (ACM SIGPLAN ML Family Workshop): Didier Rémy was a member of the program committee.
- **WGP 2014** (Workshop on Generic Programming): Pierre-Évariste Dagand was a member of the program committee.

9.1.2.3. Reviewer

In 2014, members of Gallium reviewed approximately 95 papers submitted to international conferences and 15 papers submitted to international workshops.

9.1.3. Journals

9.1.3.1. Member of the editorial board

- **Communications of the ACM**: Xavier Leroy is on the editorial board for the Research Highlights column.
- **Journal of Automated Reasoning**: Xavier Leroy is a member of the editorial board.
- **Journal of Functional Programming**: François Pottier is a member of the editorial board.
- **Journal of Formalized Reasoning**: Xavier Leroy is a member of the editorial board.

9.1.3.2. Reviewer

In 2014, members of Gallium reviewed 4 journal submissions.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Umut Acar and Mike Rainey, “Introduction to parallel computing with PAsL”, 15h, L2, University of Puerto Rico, USA.

Licence: Jacques-Henri Jourdan, “Langages de programmation et compilation” 46h, L3, École Normale Supérieure, France.

Licence: François Pottier, “Algorithmique et programmation” (INF431), 13h30, L3, École Polytechnique, France.

Licence: Gabriel Scherer, “IP1: Introduction to computer science and programming using Java”, 42h, L1, University Paris Diderot, France.

Licence: Gabriel Scherer, “IP1: Introduction to computer science and programming using C”, 42h, L3, University Paris Diderot, France.

Master: Xavier Leroy and Didier Rémy, “Functional programming languages”, 15h + 20h, M2R MPRI, University Paris Diderot/ENS Paris/ENS Cachan/Polytechnique, France.

Master: Luc Maranget, “Semantics, languages and algorithms for multi-core programming”, 9h, M2 MPRI, University Paris Diderot/ENS Paris/ENS Cachan/Polytechnique, France.

Master: François Pottier, “Compilation” (INF564), 13h30, M1, École Polytechnique, France.

9.2.2. Supervision

PhD: Çağdas Bozman, “Profilage mémoire d’applications OCaml”, Ecole Polytechnique, defended on 16 Dec 2014, supervised by Michel Mauny (ENSTA), Pierre Chambart (OCamlPro), and Fabrice Le Fessant (Inria).

PhD: Julien Cretin, “Erasable coercions: a unified approach to type systems” [11], École Polytechnique, defended on 30 Jan 2014, supervised by Didier Rémy.

PhD: Jonathan Protzenko, “Mezzo: a typed language for safe effectful concurrent programs” [12], U. Paris Diderot, defended on 29 Sep 2014, supervised by François Pottier.

PhD in progress: Arthur Guillon, “Concurrent realizability and program verification for weak memory computers”, U. Paris Diderot, started September 2014, interrupted January 2015, supervised by Luc Maranget and Jade Alglave (Microsoft Research Cambridge).

PhD in progress: Pierre Halmagrand, “Dédution Automatique Modulo”, CNAM, since September 2013, supervised by David Delahaye (CNAM), Damien Doligez (Inria), and Olivier Hermant (Mines ParisTech).

PhD in progress: Gabriel Scherer, “Term inference: proof search for singleton inhabitants”, U. Paris Diderot, since October 2011, supervised by Didier Rémy.

PhD in progress: Jacques-Henri Jourdan, “Formal verification of a static analyzer for critical embedded software”, U. Paris Diderot, since September 2012, supervised by Xavier Leroy.

Pre-PhD ENS year: Thomas Williams, “Putting ornaments into practice”, since September 2014, supervised by Didier Rémy.

9.2.3. Juries

Damien Doligez was a member of the Ph.D. jury of Çağdas Bozman, ENSTA ParisTech, Palaiseau, December 2014.

Xavier Leroy chaired the PhD committee of André Maroneze, University Rennes 1, June 2014.

Xavier Leroy was a member of the committees for the PhD awards of ACM SIGPLAN and of the GDR GPL (*Génie de la Programmation et du Logiciel*).

9.2.4. Collective responsibilities

Damien Doligez chaired the *Commission des actions de développement technologiques* of Inria Paris-Rocquencourt until Oct 2014.

Xavier Leroy is *vice-président du comité des projets* of Inria Paris-Rocquencourt and appointed member of Inria's *Commission d'Évaluation*. He participated in the following Inria hiring and promotion committees: *jury d'admissibilité CR2 Saclay*; *jury d'admissibilité DR2*; *promotions CR1*; *promotions DR1 and DR0*.

Luc Maranget is an elected member of the *Comité Technique Inria*.

Luc Maranget chairs the *Commission des utilisateurs des moyens informatiques – Recherche* of Inria Paris-Rocquencourt.

Didier Rémy is deputy scientific director of Inria, in charge of the fields Algorithmics, Programming, Software and Architecture.

Didier Rémy represents Inria in the *commission des études* of the MPRI master, co-organized by U. Paris Diderot, ENS Cachan, ENS Paris, and École Polytechnique.

9.3. Popularization

Jacques-Henri Jourdan is involved in the organization of the Junior Seminar of Inria Paris-Rocquencourt.

Jacques-Henri Jourdan manned a stand at “Salon Culture & Jeux Mathématiques”, in Paris.

Since 2012, the Gallium team publishes a research blog at <http://gallium.inria.fr/blog/>, edited by Gabriel Scherer. This blog continued its activity in 2014, with 23 posts from 5 different authors.

GAMMA3 Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events selection

7.1.1.1. Member of the conference program committee

AIAA conferences in Meshing, Visualization, and Computational Environments

7.1.2. Journal

7.1.2.1. Reviewer

The members of the team reviewed numerous papers for numerous international conferences and journals: IJNME, EWC, Computers and Structures, IMR, JCP, SICOMP, SINUM, AIAA...

GANG Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

Amos Korman has co-chaired and co-organized the BDA 2014 worksop <http://www.cs.cmu.edu/~saketn/BDA2014/>. This 2 day workshop brought together leading researchers in biology and distributed computing (from institutions such as MIT, Harvard, Stanford, and Weizmann) aiming to create a common platform for collaborations.

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committee

Pierre Fraigniaud has chaired the C track of the 41st International Colloquium on Automata, Languages, and Programming (ICALP 2014).

8.1.2.2. Member of the conference program committee

Michel Habib was member of the program committee of the 39th International Symposium on Mathematical Foundations of Computer Science (MFCS 2014).

8.1.2.3. Invited talks

Pierre Fraigniaud was keynote speaker at the 16th International Symposium on Stabilization, Safety, and Security of Distributed Systems (SSS 2014), Paderborn, Germany, Sep 28 - Oct 1, 2014.

Adrian Kosowski made a tutorial at the 5th Polish Combinatorial Conference, Bedlewo, September 2014.

Adrian Kosowski was invited speaker at Algotel 2014 - 16èmes Rencontres Francophones pour les Aspects Algorithmiques des Télécommunications, Ile de Ré, June 2014.

Laurent Viennot was invited speaker at the SMBE Satellite Meeting on Reticulated Microbial Evolution, April 27-30, 2014, Kiel, Germany.

Michel Habib made a tutorial at Ecole Rescom, France, May 2014.

8.1.3. Journal

8.1.3.1. Member of the editorial board

Pierre Fraigniaud is member of the editorial boards of Distributed Computing (DC), Theory of Computing Systems (TOCS), Fundamenta Informaticae (FI) and Journal of Interconnection Networks (JOIN).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: Carole Delporte and Hugues Fauconnier, Algorithmique distribuée avec mémoire partagée, 6h, M2, Université Paris Diderot

Master: Hugues Fauconnier, Cours programmation répartie, 33h, M2, Univ. Paris Diderot

Master: Carole Delporte, Cours et TP Protocoles des services internet, 44h, M2, Univ. Paris Diderot

Master: Carole Delporte, Cours Algorithmie réparti, 33h, M2, Univ. Paris Diderot

Master: Carole Delporte and Hugues Fauconnier, Protocoles Réseaux, 72h, M1, Université Paris Diderot

Licence: Hugues Fauconnier, Programmation objet et interfaces graphiques, 48h, L2-L3, EIDD

Licence: Carole Delporte et Hugues Fauconnier, Sécurité, 36h, L3, Univ. Paris Diderot

Licence : Boufkhad Yacine, Algorithmique et Informatique, 132h, L1, IUT de l'Université Paris Diderot

Licence : Boufkhad Yacine, Programmation Orientée Objet, 60h, L2, IUT de l'Université Paris Diderot

Master: Adrian Kosowski, Communication and Routing, 4.5h, M1, ENSEIRB-MATMECA

Master: Adrian Kosowski, Randomization in Computer Science: Games, Networks, Epidemic and Evolutionary Algorithms, 24h, M1, École Polytechnique

Master: Adrian Kosowski, Distributed Computing with Mobile Agents: Exploration, Rendezvous, and related problems, 12h, M2, IX Summer School on Discrete Mathematics in South America, Valparaiso, Chile

Licence : Fabien de Montgolfier, Introduction à la programmation, 26h, L1, Univ Paris Diderot

Licence : Fabien de Montgolfier, Programmation avancée (bio-informatique), 26h, L3, Univ. Paris Diderot

Master : Fabien de Montgolfier, Algorithmique avancée (bio-informatique), 26h, M1, Univ Paris Diderot

Licence : Fabien de Montgolfier, Systèmes et Réseaux, 52h, L3, Ecole d'Ingénieurs Denis Diderot

Master : Laurent Viennot, Système, réseau et Internet, 15h, M1, Univ. Paris Diderot

License : Michel Habib, Algorithmique, 45h, L, ENS Cachan

Master : Michel Habib, Algorithmique avancée, 24h, M1, Univ. Paris Diderot

Master : Michel Habib, Mobilité, 33h, M2, Univ. Paris Diderot

Master : Michel Habib, Méthodes et algorithmes pour l'accès à l'information numérique, 16h, M2, Univ. Paris Diderot

Master : Michel Habib, Algorithmique de graphes, 12h, M2, Univ. Paris Diderot

Licence : Pierre Charbit, Introduction a la Programmation, 30h, L1, Université Paris Diderot, France

Licence : Pierre Charbit, Automates finis, 52h, L2, Université Paris Diderot, France

Licence : Pierre Charbit, Types de Données et Objet, 52h, L1, Université Paris Diderot, France

Master : Pierre Charbit, Programmation, 60h, M2Pro PISE, Université Paris Diderot, France

Master : Pierre Charbit, Algorithmique de Graphes, 18h, M2 MPRI, Université Paris Diderot, France

8.2.2. Supervision

PhD: Jérémie Dusart, Parcours de graphes, applications aux graphes de cocomparabilité, Université Paris Diderot, defended June 2014, supervised by Michel Habib.

PhD: Antoine Mamcarz, Décompositions de trigraphes et parcours de graphes, Université Paris Diderot, defended June 30, 2014, supervised by Michel Habib.

PhD: Dominik Pajak, Algorithms for Deterministic Parallel Graph Exploration, Université de Bordeaux, defended June 13, 2014, supervised by Adrian Kosowski and Ralf Klasing.

PhD: The-Dang Huynh, Extensions de PageRank et Applications aux Réseaux Sociaux, Université Pierre et Marie Curie, since 2012, supervised by Fabien Mathieu, Dohy Hong and Laurent Viennot.

PhD: Leonardo Linguaglossa, Design of algorithms and protocols to support ICN functionalities in high speed routers, Université Paris Diderot, since 2013, supervised by Fabien Mathieu, Diego Perino and Laurent Viennot.

8.2.3. *Juries*

PhD : Hugues Fauconnier was member of the jury of Peva Blanchard, Synchronization and Fault-tolerance in Distributed Algorithms, Univ. Paris XI, September 24th

PhD : Laurent Viennot was reviewer of the thesis of Pierre-Alain Jachiet, Étude de l'évolution combinatoire des gènes par l'analyse de réseaux de similarité de séquence, Université Pierre et Marie Curie, July 2014, supervised by Eric Bapteste and Philippe Lopez

PhD : Laurent Viennot was reviewer of the thesis of Arnaud Jégou, Harnessing the power of implicit and explicit social networks through decentralization, Université de Rennes 1, September 2014, supervised by Anne-Marie Kermarrec and Davide Frey

PhD : Laurent Viennot was reviewer of the thesis of Pierre Halftermeyer, Connexité dans les réseaux et schémas d'étiquetage compact d'urgence, Université de Bordeaux, September 2014, supervised by Bruno Courcelle and Cyril Gavoille

PhD : Laurent Viennot was reviewer of the thesis of Aurélien Lancin, Étude de réseaux complexes et de leurs propriétés pour l'optimisation de modèles de routage, Université de Nice – Sophia Antipolis, December 2014, supervised by David Coudert

PhD : Fabien de Montgolfier was member of the jury of Pierre Clairet, Approche algorithmique pour l'amélioration des performances du système de détection d'intrusions PIGA, Université d'Orléans, defended on June 24th, 2014, supervised by Pascal Berthomé.

PhD : Fabien de Montgolfier was member of the jury of Antoine Mamcarz, Décompositions de trigraphes et parcours de graphes, Université Paris Diderot, defended on June 30th, 2014, supervised by Michel Habib.

8.3. Popularization

Laurent Viennot has written an article on the history of telecommunication networks with a special focus on the phone network and on Internet [13].

Laurent Viennot has animated a weekly workshop on computer science unplugged in the Pouchet primary school in Paris at CM1 level (15h during 2014). The topics covered included Nim game, Euler paths in graphs, and error correcting codes.

HIPERCOM2 Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. general chair, scientific chair

Pascale Minet was co-chair with Leila Saidane of PEMWN 2014, organized in Sousse, Tunisia.

Selma Boumerdassi was chair of:

- The International Workshop on Trusted Platforms for Mobile and Cloud Computing (TPMCC 2014), April 2014 ;
- The International Workshop on Energy Management for Sustainable Internet-of-Things and Cloud Computing (EMSICC 2014), August 2014.

Nadjib Achir acted as track chair of the Internet of Things (IoT) track of the Selected Areas in Communications Symposium of IEEE Global Telecommunications Conference 2014.

9.1.1.2. member of the organizing committee

Paul Muhlethaler organized the DGA Inria workshop on Telecommunication and networking: "Software Defined Network (SDN) & MANET" in October 2014.

Christine Anocq was member of the organizing committee of the international conference PEMWN 2014.

9.1.2. Scientific events selection

9.1.2.1. member of the conference program committee

Pascale Minet was member of the program committee of:

- Ad Hoc Nets 2014, 6th International ICST Conference on Ad Hoc Networks, August 2014.
- DCNET 2014, International Conference on Data Communication Networking, August 2014,
- GLOBECOM 2014, IEEE Global Telecommunications Conference Selected Areas in Communications, December 2014.
- ICC 2014, IEEE International Conference on Communications, June 2014
- ICN 2014, International Conference on Networks, January 2014.
- IFIP Wireless Days 2014, November 2014.
- IROS 2014, IEEE/RSJ International Conference on Intelligent Robots and Systems, September 2014.
- Med-Hoc-Net 2014, 14th IEEE/IFIP Mediterranean Ad-Hoc Networking conference, June 2014.
- PECCS 2014, 4th international conference on Pervasive and Embedded Computing and Communication Systems, February 2014. and Adaptive Wireless Sensor Networks, in conjunction with NETYS 2013, Marrakech, Morocco, April 2013.
- RTNS 2014, 21st International Conference on Real-Time and Network Systems, September 2014.
- SNPD 2014, 13th International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, June 2014.

Paul Muhlethaler was also member of:

- the Steering committee of MobileHealth 2014, 4th ACM MobiHoc Workshop on Pervasive Wireless Healthcare In Conjunction With MobiHoc 2014 Conference, June 2014, Athens, Greece,
- the Technical committee of the third International conference on Performance Evaluation and Modeling in Wireless Networks, PEMWN 2014, November 2014, Sousse, Tunisia.

Cédric Adjih was member of the program committee of:

- AINTEC 2014, ACM Asian Internet Engineering Conference, November 2014.
- PEMWN 2014, 3rd International Conference on Performance Evaluation and Modeling in Wireless Networks, November 2014, Sousse, Tunisia.

Selma Boumerdassi was member of the program committee for:

- IEEE Global Telecommunications Conference, GLOBECOM 2014;
- IEEE International Conference on Communications, ICC 2014;
- International Workshop on Communicating Objects and Machine to Machine for Mission-Critical Applications, COMMCA 2014;
- IEEE Symposium on Computer Applications and Industrial Electronics, ISCAIE 2014;
- IEEE Symposium on Wireless Technology and Applications, ISWTA 2014.

Nadjib Achir was member of the program committee for:

- IEEE Global Telecommunications Conference, GLOBECOM 2014;
- IEEE International Conference on Communications, ICC 2014;
- IEEE Wireless Communications and Networking Conference, WCNC 2014;
- IEEE Consumer Communications & Networking Conference, CCNC 2014;
- Global Information Infrastructure and Networking Symposium, GIIS 2014.

9.1.3. Journal

9.1.3.1. member of the editorial board

Nadjib Achir acted as guest editor of the special issue “Planning and Deployment of Wireless Sensor Networks”, of the International Journal of Distributed Sensor Networks.

9.1.3.2. reviewer

Pascale Minet was reviewer for the following journals:

- IEEE Transactions on Parallel and Distributed Systems
- International Journal of Sensor Networks,
- International Journal of Information and Communication Technology,
- Journal of Communications,
- Journal of Network and Computer Applications,
- Computer Communications Journal,
- Ad Hoc Networks Journal,
- Mathematical Problems in Engineering,
- Wireless Networks.

Paul Muhlethaler was reviewer for the following journals:

- IEEE Transactions on Wireless Communications,
- IEEE Transactions on Vehicular Technology,
- IEEE Transactions on Information Theory.

Nadjib Achir was reviewer for:

- Sensor Networks (MDPI),
- Wireless Communications and Mobile Computing (Wiley),
- Internet of Things Journal (IEEE),
- Ad Hoc Networks Journal (Elsevier).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : **Ichrak Amdouni** taught "Principe et architecture des réseaux" and "Réseaux locaux et équipements actifs" at the university of Versailles Saint-Quentin (L1).

Master : **Pascale Minet** taught:

- Networks and quality of service in Master Systèmes Electroniques et Traitement de l'Information, at INSTN (Saclay).
- Mobile ad-hoc networks: medium access, routing and quality of service in Master Ingénierie informatique of the University of Marne-la-Vallée.
- Mobile ad hoc networks and wireless sensor networks: medium access, routing and energy efficiency in Master ScTIC (Systèmes complexes, Technologies de l'Information et du Contrôle) of the University of Paris 12.

9.2.2. Supervision

PhD :

- **Ridha Soua**, "Wireless Sensor Networks in Industrial Environment: Energy Efficiency, Delay and Scalability", University Pierre et Marie Curie - Paris 6, February 2014, Pascale Minet, adviser, Nadjib Achir, examiner.
- Ines Ben Jemaa, "Multicast communications for cooperative vehicular systems", Mines ParisTech, December 2014, Paul Muhlethaler, co-adviser, Nadjib Achir, reviewer.

9.2.3. Juries

HdR : Nadjib Achir, "Wireless Networks: Deployment and Quality of Service Provisioning", University Paris 13, 2014, Paul Muhlethaler, examiner.

PhD :

- Hicham Lakhlef, "Algorithmes distribués pour l'optimisation du déploiement des microbots MEMS", University of Franche Comté, November 2014, Pascale Minet, examiner.
- Zayneb Trabelsi Ayoub, "Déploiement large échelle des réseaux de capteurs sans fil IEEE 802.15.4 ZigBee", ENSI, Tunisia, november 2014, Paul Muhlethaler, reviewer, Pascale Minet, examiner.
- Salsabil Gherairi, "Garantie des délais des trafics temps réel pour les réseaux de capteurs sans fil", ENSI, Tunisia, November 2014, Pascale Minet, examiner.
- Rima Hatoum, "Algorithmes d'ordonnancement inter-couches avec adaptation de modulation et de codage dans des réseaux hétérogènes", University of Paris 6, June 2014, Nadjib Achir, reviewer.
- Ibtissem Boulanouar, "Algorithmes de suivi de cible mobile pour les réseaux de capteurs sans fil", University of Paris Est, June 2014, Nadjib Achir, reviewer.
- Sara Mehar, "Le véhicule comme source et consommateur d'informations : collecte, dissémination et traitement de données pour une mobilité durable", University of Bourgogne, December 2014, Paul Muhlethaler, president.

9.3. Popularization

- **the Inria-Industry meeting focusing on Telecommunications**, in Rocquencourt, November 2014. The HIPERCOM2 team was very active and presented demonstrations of Wireless Sensor Networks. The demonstration prepared by Erwan Livolant, Cédric Adjih, Ichrak Amdouni, Pascale Minet concerned the principles of wireless sensor networks, the energy-efficient routing protocol, the node coloring algorithm running in the OCARI network to maximize network lifetime. Tuan Dang from EDF presented the new OCARI platform. Maurice Sellin from DCNS explained the deployment of an OCARI network in a DCNS ship, the application supported is fire detection and OCARI sensor nodes are provided by ADWAVE.
- Nadjib Achir, Cédric Adjih, Hana Baccouch, Ichrak Amdouni, Erwan Livolant and Ridha Soua explained the principles of communication and routing in wireless sensor networks and organized several demonstrations for undergraduates and students who visited Inria in February 2014.

LIFEWARE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- François Fages was co-Chair of **BPPC'14**, Fifth International Workshop in Bin Packing and Placement Constraints, associated to CPAIOR'14, Cork Ireland, May 2014.

9.1.1.2. Member of the organizing committee

- François Fages was member of the organizing committee and session co-chair of **SFC'14**, the 44ième Congrès de la Société Francophone de Chronobiologie, ESPCI ParisTech, Oct. 29-31 2014.

9.1.2. Scientific events selection

9.1.2.1. Chair of conference program committee

- François Fages was co-PC-Chair of **FMMB'14**, First International Conference on Formal Methods for Macro Biology, joint to ICSB'14, Noumea, Nouvelle Calédonie, September 2014.

9.1.2.2. Member of the conference program committee

- François Fages was member of the program committees of :
 - **CMSB'14**, Twelfth International Conference on Computational Methods in Systems Biology – Nov. 17-19, Manchester, 2014.
 - **WCB'14** 10th Workshop on Constraint-based methods for Bioinformatics, associated to CP, Lyon France, September 2014.
 - **VEMDP'14** The 1st International Workshop on Verification of Engineered Molecular Devices and Programs – An affiliated workshop of CAV 2014 hosted in Vienna, Austria on July 17, 2014.
 - **HSB'14** Third workshop Hybrid Systems Biology – Vienna Summer of Logic, July 23-24, 2014.
 - **CHR'14** 11th International Workshop on Constraint Handling Rules — Vienna Summer of Logic, July 18, 2014.
- Grégory Batt was member of the program committee of **HSB'14**, the third workshop on Hybrid Systems Biology – Vienna Summer of Logic, July 23-24, 2014.

9.1.2.3. Reviewer

- Grégory Batt was member of the review panel of ERASynBio, an ERA-NET from the seventh framework program for the development and coordination of synthetic biology in the European research area (Lisbon, Jan 2014).
- François Fages was reviewer for the Luxembourg National Research Fund.

9.1.3. Journal

9.1.3.1. Member of the editorial board

- François Fages is member of
 - the Editorial Board of the Computer Science area of the Royal Society Open Science journal since 2014
 - the Steering Committee of the international conference series Computational Methods in Systems Biology since 2008
 - the Editorial Board of the journal RAIRO OR Operations Research since 2004

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Lifeware is affiliated to the Doctoral school of Mathematical Science of the University Paris Diderot, and to the interdisciplinary Doctoral school "Frontières du Vivant" of the University Paris Descartes.

The following courses have been given by members of Lifeware:

Master: course C2-19 on *Computational Methods for Systemic and Synthetic Biology*, Master Parisien de Recherche en Informatique (MPRI) François Fages (responsible, 12h), Grégory Batt (12h), Denis Thieffry (12h).

Master: Interdisciplinary Master in Life Science at the Ecole Normale Supérieure, Paris. Denis Thieffry (coordinator), Grégory Batt (6h).

Master: course C2-35-1 on *Constraint Programming*, Master Parisien de Recherche en Informatique (MPRI) Sylvain Soliman (responsible, 24h) [beginning of the 2013-2014 academic year].

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

Master: *Statistics* at *Master Approches Interdisciplinaires du Vivant* (AIV), Valentina Peschetola (24h).

Grégory Batt has been selected to participate to the first workshop on Teaching Through Research of the Leadership Program, organised by the Centre for Research and Interdisciplinarity under the auspice of the “learning science” UNESCO chair (April 2014, Paris).

9.2.2. Supervision

HDR: Grégory Batt, *Design, optimization and control in systems and synthetic biology*, Université Paris Diderot, March 7, 2014. Jury: Vincent Danos (Edinburgh U), Frédéric Devaux (Paris5 U), Hidde de Jong (Inria), Olivier Gandrillon (CNRS), Mustafa Khammash (ETHZ), and Reiner Veitia (Paris7).

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

PhD: Xavier Duportet, *Developing new tools and platforms for mammalian synthetic biology: from the assembly and chromosomal integration of large genetic circuits to the engineering of artificial intercellular communication systems*, Université Paris Descartes (Oct. 2010), Paris, Dir. Grégory Batt and Ron Weiss (MIT), Nov 14, 2014. Jury: Grégory Batt, Diego di Bernardo (Tigem), Tim Lu (MIT), Didier Mazel (Pasteur), Franck Molina (CNRS), Reiner Veitia (Paris 7), and Ron Weiss

PhD: David Fournier, *Metro Regenerative Braking Energy Optimization through Rescheduling: Mathematical Model and Greedy Heuristics Compared to MILP and CMA-ES*, Université Paris Diderot, Paris (Oct 2011), Dir. François Fages and Denis Mulard (General Electric), 27 Nov 2014. Jury: Thierry Benoist (Innovation24), Xavier Delorme (Ecole des Mines de Saint Etienne), Roberto Di Cosmo (U. Paris-Diderot), François Fages, Narendra Jussien (Telecom Lille), Denis Mulard (General Electric).

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

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

PhD in progress : Artemis Llamasi, Université Paris Diderot, Paris, Nov 2012, Dir. Grégory Batt and Pascal Hersen

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

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

9.2.3. Juries

- HDR Pascal Hersen, Université Paris-Diderot, Examiner: François Fages
- PhD Adrien Basso-Blandin, Université d'Evry, November 2014, Examiner: François Fages
- PhD Benjamin Gyori, National University of Singapore, October 2014, Reviewer: Grégory Batt
- PhD Santiago Videla, Université de Rennes, July 2014, Reviewer: Grégory Batt
- PhD Alejandro Vignoni, Universitat Politecnica de Valencia, May 2014, Reviewer: Grégory Batt

9.3. Popularization

- Grégory Batt has been an invited speaker at the citizen science workshop Worldviews and Values in Synthetic Biology, Paris, June 2014.
- Grégory Batt had a stand at *Rencontres Inria Industries*, Lyon, May 2014.
- Xavier Duportet has been invited to speak at the *4th Congreso del Futuro* (Santiago, Chili), together with renown change makers (e.g. J. Rifkin, T. Piketty)
- Xavier Duportet is the cofounder and president of Hello Tomorrow, an international non-profit organization to promote technology entrepreneurship, with hubs in more than 80 cities worldwide and organizing one of the largest global startup competition.
- Xavier Duportet is the vice president of *Osons La France*, a forum to promote scientific innovation (Grand Palais, Paris, Dec 2014).
- Xavier Duportet has been featured in *Le Monde*, *L'Obs*, *Europe1*, *L'Opinion* (2x), *SoonSoonSoon*, *L'Atelier*, and *Widoobiz*.
- François Fages gave an invited talk at *Forum des Lauréats en Informatique et Mathématiques Appliquées*, Collège de France, Paris, Dec 2014.
- François Fages gave an invited talk at *Deuxième Journée Biologie et Mathématiques sur la Montagne*, Collège de France, Paris, Oct 2014.
- Artémis Llamosi is the co-fondeur and general secretary of the OpenLab, and organizer of related events on product industrialization. He provides scientific expertise to hosted startups.

Our research has also been presented at many scientific venues, in invited talks at the

- 21st European Conference on Artificial Intelligence, ECAI'14 (Prague, Aug 2014, François Fages),
- 10th International Conference on Distributed Computing and Internet Technology ICDCIT'14 (Bhubanesvar, Feb 2014, François Fages),

contributed talks

- in LyonSysBio conference (Nov. 2014, François Bertaux),
- International Workshop on Image-based Systems Biology (Jena, Sept. 2014, Szymon Stoma),

invited seminars

- IriSa Rennes and LISBP Toulouse (Grégory Batt),

and posters at

- the Systems Biology of Human Diseases workshop (Harvard, June 2014, François Bertaux),
- q-bio summer conference (Santa Fe, Aug. 2014, François Bertaux),
- Stochastic Biology (IST Austria, May 2014, François Bertaux),
- Image Bioinformatics (Leuven, Oct. 2014, Szymon Stoma),
- European Conference on Computational Biology (Strasbourg, Sep 2014, Denis Thieffry, Pauline Traynard),
- International Conference on Systems Biology (Melbourne, Sep 2014, François Fages, Pauline Traynard).

MAMBA Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Journal

9.1.1.1. member of the editorial board

- Scientific World Journal (Dirk Drasdo)

9.1.1.2. reviewer

- J. Clairambault in 2014 for PLoS Comp Biol, Seminars Canc Biol, Cancer Research, MMNP, Canc Cell Intl, J Theor Biol, Bull Math Biol, J Math Biol, Future Medicine, Math BioSci, Math BioSci Eng, Non Linear Biomed Physics, Theor Biol Med Modelling
- M. Doumic in 2014 for Ann. IHP Non-Linear, Journal of Mathematical Biology, Proc. London Math. Society, habilitation of M. Ribot.
- D. Drasdo in 2014 for e.g. Nature, Bioinformatics, PLoS Comput Biol, habilitation of A. Zinovyev (Inst. Curie, habil. at ENS Rue d'Ulm), CaSyM Roadmap (Coordinating Action Systems Medicine: Implementation of Systems Medicine across Europe)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: J. Clairambault, Modélisation de la croissance cellulaire et tissulaire, 2 h de cours magistral, L2 Parcours Médecine-Sciences UPMC, France

Master: J. Clairambault, Mathematical biology, M2 Mathématiques appliquées, 6 h de cours magistral (in English), UPMC, France

Master: J. Clairambault, Modélisation de l'optimisation thérapeutique en cancérologie, 4 h de cours magistral, M2 Pharmacologie, Rennes, France

Doctorat: J. Clairambault, Modélisation de la croissance cellulaire et tissulaire, 2 h de cours magistral, DESC Oncologie, UPMC, France

Summer/Winter schools: J. Clairambault, Winter school BIOMAT La Falda (Córdoba, Argentina), August 2014, 3 h of conference classes (en castellano)

Master: M. Doumic, course on inverse problems and applications in population dynamics (24 hours)

Master: D. Drasdo, Mathematical Biology, UPMC: "Agent-based models of tissue organisation" (24h)

9.2.2. Supervision

HdR: Nicolas Vauchelet, "Contributions mathématiques à l'étude de modèles décrivant le mouvement de particules confinées et de micro-organismes", UPMC, 08/12/2014

PhD: Hadjer Wafaâ Haffaf, "Analyse de l'agrégation des protéines dans les maladies neurodégénératives amyloïdes - Application aux maladies à prion", UPMC, defended 14/10/17, Marie Doumic

PhD in progress: Aurora Armiento, "Inverse problems for aggregation kinetics", begun September 2013, M. Doumic and P. Moireau (Inria Saclay, M3DISIM team)

PhD in progress: Sarah Eugène, "Stochasticity in nucleation dynamics", begun September 2013, M. Doumic and P. Robert (Inria Paris-Rocquencourt, RAP project-team)

PhD in progress: Adélaïde Olivier, “Nonparametric estimation of the division rate in branching process”, begun September 2012, M. Doumic and M. Hoffmann (Prof. Univ. Paris-Dauphine)

PhD in progress: Thibault Bourgeron, “Linear and nonlinear structured population models”, begun September 2012, M. Doumic and B. Perthame

PhD in progress: Ján Eliaš, “p53 intracellular spatio-temporal dynamics”, begun October 2012, J. Clairambault and B. Perthame

PhD in progress: Casimir Emako-Kazianou, L. Almeida and N. Vauchelet

PhD in progress: Antonin Prunet, begun October 2014, L. Almeida and A. Escargueil

PhD in progress: Andrada Maran, “Modelling early leukaemogenesis”, begun March 2014, J. Clairambault and B. Perthame

PhD in progress: Cécile Taing, begun October 2014, A. Lorz and B. Perthame

PhD in progress: François Bertaux (since September 2011), supervision by Dirk Drasdo and Gregory Batt

PhD in progress: Noémie Bossier (since November 2013), supervision by Dirk Drasdo and Irene Vignon-Clementel

PhD in progress: Géraldine Cellière (since October 2012), supervision by Dirk Drasdo, Andrei Zinovyev and Emmanuel Barillot (Institut Curie)

PhD in progress: Adrian Friebel (since June 2011), supervision by Dirk Drasdo and Stefan Hoehme

PhD in progress: Johannes Neitsch, Univ. Leipzig (since June 2011), supervision by Dirk Drasdo and Paul Van Liedekerke

9.2.3. Juries

- J. Clairambault: José Luis Avila, PhD defence, 02/07/2014, Paris XI (Applied mathematics)
- J. Clairambault (Reviewer) : Hossein Ayoub, PhD defence, 04/07/2014, Bordeaux (Applied mathematics)
- J. Clairambault: Nathalie Eymard, PhD defence, 04/12/2014, Lyon (Applied mathematics)
- J. Clairambault: Niklas Hartung, PhD defence, 15/12/2014, Marseille (Applied mathematics)
- M. Doumic: H.W. Haffaf, PhD defence, 17/10/2014, UPMC (Applied mathematics)
- M. Doumic: N. Vauchelet, habilitation thesis, 8/12/2014, UPMC (Applied mathematics)
- M. Doumic: M. Ribot, habilitation thesis, 12/12/2014, UPMC (Applied mathematics)
- D. Drasdo: A. Zinovyev, habilitation thesis, 04/04/2014, ENS (Computational Biology)

9.3. Popularization in international bulletins

- Article Clairambault, J. “My personal journey in mathematical biology and medicine”. Society for Mathematical Biology Newsletter 28(1):11-12, January 2015 [27], <http://www.smb.org/publications/newsletter/vol28no1.pdf>
- Article Clairambault, J. “Perspectives on new and less new opportunities for mathematical biology as applied to biological and clinical medicine”. Society for Mathematical Biology Newsletter 27(2):14-15, May 2014 [26], <http://www.smb.org/publications/newsletter/vol27no2.pdf>

MATERIALS Team

8. Dissemination

8.1. Promoting Scientific Activities

S. Brisard has co-organized the "Stochastics and Material Mechanics" mini-symposium at the 2014 "European Mechanics of Materials Conference", organized at Gothenburg (Sweden), 27-29 August 2014.

E. Cancès

- is a member of the editorial boards of *Mathematical Modelling and Numerical Analysis* (2006-), of *SIAM Journal of Scientific Computing* (2008-), of *Communications in Mathematical Sciences* (2011-),
- is a member of the executive committee of the CEA-EDF-Inria schools in applied mathematics and computer science.

He was an Ordway visiting professor at the University of Minnesota for the academic year 2013-2014.

He has organized or co-organized:

- the 2nd workshop on "Mathematical and numerical analysis of electronic structure models", Berlin, April 2014,
- the workshop "Horizon math 2014", Rueil Malmaison, December 2014.

C. Le Bris is editor-in-chief of *Applied Mathematics Research Express* (2003-). He is a managing editor of *Networks and Heterogeneous Media*. He is a member of the editorial boards of *Annales mathématiques du Québec* (2013-), *Archive for Rational Mechanics and Analysis* (2004-), *COCV (Control, Optimization and Calculus of Variations)* (2003-), *Mathematics in Action* (2008-), *Nonlinearity* (2005-), *Journal de Mathématiques Pures et Appliquées* (2009-).

He is a member of the editorial boards of the monograph series *Mathématiques & Applications, Series*, Springer (2008-), and *Modeling, Simulations and Applications, Series*, Springer (2009-).

C. Le Bris is a member of

- the Cabinet of the High Commissioner for Atomic Energy,
- the scientific board of ENPC, 2008- (nominated as representative of the research scholars),
- the "Comité d'experts" for the "Fondation de Recherche pour l'Aéronautique et l'Espace",
- the "Comité d'animation du domaine thématique Mathématiques appliquées, calcul et simulation" at Inria,
- the "International Scientific Advisory Committee" of the Centre de Recherche Mathématique, Université de Montréal,
- the "Advisory Board" of the DFG Cluster of Excellence Engineering of Advanced Materials, Erlangen,
- the "International Scientific Advisory Board" of the DFG research center Matheon, Berlin,
- the "Conseil scientifique de la SMAI" (Scientific Council of the French Applied Maths Society)s,
- the International Mathematical Union Circle,
- the "Conseil de perfectionnement du Master de Mathématiques" of the University Pierre et Marie Curie.

C. Le Bris has held a position of Visiting Professor at the University of Chicago, February-October-November 2014.

He has been a member of the Program Committee of ICM 2014 in Seoul and is a member of

- the scientific committee of the conference Dimension reduction: mathematical methods and Applications, Pennsylvania State University, March 21-24, 2015.

He has co-organized

- with P. Souganidis and S. Weinberger, the conference *Prospects in Applied Mathematics*, Chicago, 19-20 October 2014.

He has been the Göran Gustafsson Lecturer in Mathematics 2014, KTH, Stockholm.

F. Legoll

- is a member of the editorial board of SIAM MMS (2012-) and of ESAIM Proc (2012-),
- is a member of the Scientific Committee of SciCADE 2015.

T. Lelièvre

- is editor-in-chief of ESAIM: Proceedings (with D. Chafai, P. Lafitte and C. Mouhot),
- co-organized the Workshop "Numerical methods for high-dimensional problems" at the Ecole des Ponts, April 14-18th 2014 (with Virginie Ehrlacher, Yvon Maday and Anthony Nouy),
- co-organized the Journées Inverse problems for multiscale and stochastic problems, Ecole des Ponts, October 2-3rd 2014 (with Virginie Ehrlacher, Frédéric Legoll and Karam Sab),
- co-organized the MoMaS'14 conference. CIRM, November 17-20th, 2014 (with Grégoire Allaire, Clément Cancès, Alexandre Ern and Raphaële Herbin),
- co-organizes the Journées EDP-Probab at Institut Henri Poincaré (with F. Malrieu),
- is the head of the GDR MoMaS, a French research group on the mathematical modeling and the numerical simulations for nuclear waste management problems (Main scientific themes: multiscale models for flows in porous media, molecular simulation of clays, multiphase flows),
- is in charge of the Theme 4 (Stochastic modeling, quantification and uncertainty propagation for multiscale mechanical models of materials) of the Labex MMCD,
- is involved in the organization of the IHP trimester "Numerical Methods for PDEs", Autumn 2016 (with D. A. Di Pietro, A. Ern and L. Formaggia).

G. Stoltz has

- co-organized the workshop "Computational methods for statistical mechanics - at the interface between mathematical statistics and molecular simulation" at ICMS (Edinburgh, UK), June 2-6, 2014 (with G. Pavliotis, Imperial College London, and Ch. Hartmann, FU Berlin)
- has given a public lecture on "Computer Simulations: The third way of doing science", at ICMS (Edinburgh, UK, June 2014)

8.2. Teaching - Supervision - Juries

The members of the team have taught the following courses:

- Licence: Probabilités (18h) et calcul scientifique (18h), Ecole Centrale Paris (S. Boyaval),
- Licence: Analyse, 36h, L3, Ecole des Ponts, France (E. Cancès, D. Gontier, F. Legoll, M. Rousset, W. Minvielle, V. Ehrlacher, S. Lemaire)
- Licence: Remise à niveau en analyse de base et algèbre linéaire, 18h, L3, ESIEE (S. Lemaire)
- Licence: Calcul Scientifique, 30h, L3, Ecole des Ponts ParisTech (G. Stoltz)
- Master: Mathématiques des modèles multiéchelles, 39h, M1, Ecole des Ponts ParisTech (F. Legoll)
- Master: Problèmes multiéchelles, 24h, M2, Université Paris 6 (F. Legoll)
- Master: Coques et Structures avancées, 24h, M1, Ecole des Ponts ParisTech (S. Brisard)
- Master: Conception des Structures, 14h, M1, Ecole des Ponts ParisTech (S. Brisard)

- Master: Images et Mécanique, 6h, M2, Ecole des Ponts ParisTech (S. Brisard),
- Master: Imagerie des Milieux Désordonnés, 9h, M2, Ecole des Ponts ParisTech (S. Brisard)
- Master: Modélisation mathématique des vagues (3h00), M1, Ecole Nationale des Ponts et Chaussées (S. Boyaval),
- Master: Processus Stochastiques, 18h. M1, ESIEA (C.-E. Bréhier),
- Master: Outils Probabilistes pour la Finance, M1, Ecole des Ponts, France (M. Rousset),
- Master: Processus de Markov et temps long, 30h, M2, Université Paris-Est (M. Rousset),
- Master: Analyse spectrale, 39h, M1, Ecole des Ponts, France (G. Stoltz, V. Ehrlacher)
- Master: Modéliser Programmer Simuler, 28 h, M1, Cours Ecole des Ponts ParisTech (T. Lelièvre).
- Master: Méthodes numériques probabilistes, 36 h, M2 Mathématiques et Applications, Université Pierre et Marie Curie (T. Lelièvre).
- Master: Analyse spectrale, 39h, M1, Ecole des Ponts, France (V. Ehrlacher, G. Stoltz)
- Master: Projets de physique, 10h, M1, Ecole des Ponts, France (V. Erhlacher, G. Stoltz)
- Master: Introduction au calcul Scientifique, 13h, M1, Ecole des Mines ParisTech, France (G. Stoltz, F. Madiot)
- Master: théorie spectrale des opérateurs de Schrödinger, 30h, M2, Université de Marne-la-Vallée, France (G. Stoltz)

The following PhD were defended by students members of the research group at the Ecole des Ponts:

- David Benoit, Méthodes numériques pour la simulation des fluides non-Newtoniens, Université Paris-Est, Université Paris Est, started October 1st, 2010, supervised by C. Le Bris and T. Lelièvre, January 22nd 2014.

The following PhDs are in progress (some of the following students conduct their research on a daily basis in other research groups, co-supervised by members of MATHERIALS) :

- François Madiot, Multiscale finite element methods for advection diffusion problems, Université Paris-Est, Ecole des Ponts ParisTech, started october 1st, 2013, supervised by C. Le Bris and F. Legoll,
- William Minvielle, Méthodes numériques pour les matériaux, Université Paris-Est, Université Paris Est, started october 1st, 2012, supervised by C. Le Bris and F. Legoll,
- David Gontier, Université Paris-Est, started September 1st, 2012, supervised by E. Cancès,
- Ahmed-Amine Homman, Multiscale methods for the simulation of shock and detonation waves, Université Paris-Est, Ecole des Ponts ParisTech and CEA/DAM, started April 1st, 2013, supervised by G. Stoltz and J.-B. Maillet,
- Zofia Trstanova, A mathematical analysis of some importance sampling strategies in molecular dynamics, Université Joseph Fourier and Inria Grenoble, started June 1st 2013, supervised by S. Redon and G. Stoltz,
- Gerome Faure, Multiscale methods for the simulation of shock and detonation waves, Université Paris-Est, Ecole des Ponts ParisTech and CEA/DAM, started November 1st 2014, supervised by G. Stoltz and J.-B. Maillet,
- Boris Nectoux, Métastabilité et distribution quasi-stationnaire, since November 2014, supervised by T. Lelièvre and E. Cancès,
- Houssam Alrachid, Méthodes numériques en dynamique moléculaire, Ecole des Ponts ParisTech, since September 2012, supervised by T. Lelièvre,
- Rémi Saint, Modèles multi-échelles pour le trafic, IFFSTAR and Ecole des Ponts ParisTech, since September 2013, supervised by T. Lelièvre and X. Louis.

The following HDR was defended:

- Mathias Rousset, Probability in computational physics and biology: some mathematical contributions, Université Paris-Est, 27 nov. 2014.

8.3. Conference participation

Members of the team have delivered lectures in the following seminars, workshops and international conferences:

- S. Boyaval, Séminaire mathématiques appliquées à RWTH, IGPM, 2014,
- S. Boyaval, Groupe de travail mathématiques appliquées à Université de Marne la Vallée, LAMA, 2014,
- C.-E. Bréhier, SPDEs and Applications IX, Trento, Italy, January 2014,
- C.-E. Bréhier, MCQMC 2014, Leuven, Belgium, April 2014,
- C.-E. Bréhier, Journées MAS 2014, Toulouse, August 2014,
- C.-E. Bréhier, Seminar of Numerical Analysis, Geneva, Switzerland, October 2014,
- C.-E. Bréhier, Seminar of Probability and Statistics, Bordeaux, November 2014,
- S. Brisard, Séminaire LabEx MMCD – Industrie, ENPC, July 2014,
- S. Brisard, Journées annuelles NEEDS – Milieux Poreux, Paris, December 2014,
- E. Cancès, CIRM meeting on advanced numerical methods for the simulation of Bose-Einstein condensates, February 2014,
- E. Cancès, Ki-Net Workshop on mathematical and numerical methods for complex quantum systems, Chicago, March 2014,
- E. Cancès, Mathematics colloquium, University of Minnesota, April 2014,
- E. Cancès, Weakly seminar of the chemistry department, University of Minnesota, April 2014,
- E. Cancès, Weakly seminar of the mathematics department, Bonn, May 2014,
- E. Cancès, Weakly seminar of the mathematics department, Amiens, June 2014,
- E. Cancès, IPAM workshop on materials defects, Lake Arrowhead, June 2014,
- E. Cancès, Oberwolfach workshop on computational multiscale methods, June 2014,
- E. Cancès, IPAM summer school on Electronic structure theory of materials and (bio)molecules, Los Angeles, July 2014,
- E. Cancès, International congress of mathematicians (invited lecture), Seoul, August 2014,
- E. Cancès, Workshop on Solution for solvation, on the occasion of Prof. Tomasi's 80th birthday, Pisa, September 2014,
- E. Cancès, Annual meeting of the ANR Becasim, Lille, September 2014,
- E. Cancès, BIRS workshop on multiscale models for crystal defects, Banff, September 2014,
- E. Cancès, ICERM workshop on high-dimensional approximation, integration and optimization, Providence, October 2014,
- E. Cancès, Prospects in applied mathematics, Chicago, October 2014,
- E. Cancès, Workshop on mathematics integrated to industry, Sao Jose dos Campos, November 2014,
- E. Cancès, X-IHES Laurent Schwartz seminar, November 2014,
- E. Cancès, Zurich colloquium on applied and computational mathematics, November 2014,
- E. Cancès, Horizons math 2014, Rueil Malmaison, December 2014,
- V. Ehrlacher, LJLL workshop on "Sparse tensor methods", University Paris 6, France, January 2014,
- V. Ehrlacher, Seminar of the mathematics department of Chemnitz University, Chemnitz, Germany, February 2014,

- V. Ehrlicher, GdR AMORE meeting, ENS Cachan, France, March 2014,
- V. Ehrlicher, Workshop on "Numerical methods for electronic structure calculations", Berlin, Germany, April 2014,
- V. Ehrlicher, IPAM Workshop on Materials Defects: Mathematics, Computation and Engineering, Lake Arrowhead, USA, June 2014,
- V. Ehrlicher, ICOSAHOM conference, Salt Lake City, USA, June 2014,
- V. Ehrlicher, WCCM conference, Barcelona, Spain, July 2014,
- V. Ehrlicher, Banff workshop on "Multiscale models for crystal defects", Banff, Canada, September 2014,
- V. Ehrlicher, Journée Forum CEA Incertitudes, CEA DAM Bruyères-le-Chatel, France, September 2014,
- V. Ehrlicher, LJLL workshop on "Sparse tensor methods", University Paris 6, France, December 2014,
- D. Gontier, Theoretical and numerical aspects of quantum transport, Aalborg, April 2014,
- D. Gontier, Mathematical and numerical analysis of electronic structure models, April 2014,
- D. Gontier, Solid math, Trieste, June 2014,
- C. Le Bris, Workshop 'Multiscale Problems from Physics, Biology and Materials Science', Shanghai Jiao Tong University, May 28-31, 2014,
- C. Le Bris, Workshop at the Mittag-Leffler Institute, September 2014,
- C. Le Bris, Final conference of the SPP 1324, Marburg, November 2014,
- C. Le Bris, Colloquium of the Imperial College, March 2014,
- C. Le Bris, Colloquium of the Eindhoven Multiscale Institute, March 2014,
- C. Le Bris, Outreach Conference of the Series Sciences and Society, Université de Lorraine, Region Lorraine, November 2014,
- F. Legoll, Weekly seminar, Imperial College, London, February 2014,
- F. Legoll, Workshop "From atomistic to continuum models in material science", L'Aquila (Italy), April 2014,
- F. Legoll, Workshop on Computational Aspects of Multiscale Materials Modeling, Evanston (USA), May 2014,
- F. Legoll, Weekly seminar, Augsburg University, May 2014,
- F. Legoll, Reunion Conference of the Materials Defects IPAM program, Los Angeles, June 2014,
- F. Legoll, Oberwolfach workshop "Computational Multiscale Methods", June 2014,
- F. Legoll, 8th International Workshop on Parallel Matrix Algorithms and Applications, Lugano, July 2014,
- F. Legoll, AIMS conference, Madrid, July 2014,
- F. Legoll, WCCM conference, Barcelona, July 2014,
- F. Legoll, Workshop on Multiscale Models of Crystal Defects, Banff, Sept. 2014,
- F. Legoll, MMM conference, Berkeley, October 2014,
- F. Legoll, Journées annuelles NEEDS, Nantes, October 2014,
- F. Legoll, Atelier du GdR ModMat "De l'atome au code industriel", Marseille, December 2014,
- T. Lelièvre, conference MCMSKI, Chamonix, January 2014,
- T. Lelièvre, conference on applied mathematics, MPI Leipzig, January 2014,
- T. Lelièvre, séminaire K. Schulten group, Urbana Champaign, January 2014,
- T. Lelièvre, CECAM conference, Lugano, March 2014,

- T. Lelièvre, conférence MCQMC, Leuven, April 2014,
- T. Lelièvre, ICMS lecture, "Computational methods for statistical mechanics", Edinburgh, June 2014,
- T. Lelièvre, Numerical Analysis for Partial Differential Equations, Sussex, June 2014,
- T. Lelièvre, ICMS conference, "Multiscale Computational Methods in Materials Modelling Meeting", Edinburgh, June 2014,
- T. Lelièvre, Oberseminar Analysis, Munich, June 2014,
- T. Lelièvre, Inria TOSCA team seminar, July 2014,
- T. Lelièvre, AIMS conference, Madrid, July 2014,
- T. Lelièvre, ENS Cachan, Séminaire pour les nouveaux normaliens, September 2014,
- T. Lelièvre, ANR Stab conference, Lyon, September 2014,
- T. Lelièvre, CECAM conference, Mainz, October 2014,
- T. Lelièvre, Inria POEM team seminar, Paris, October 2014,
- T. Lelièvre, Statistics Colloquium, Chicago, October 2014,
- T. Lelièvre, Séminaire EDP non linéaires, Université Paris 13, December 2014,
- T. Lelièvre, Séminaire ENS Chimie, Paris, December 2014,
- W. Minvielle, Weekly seminar, Creteil University, April 2014,
- W. Minvielle, Summer school on Applied Analysis for Materials, Berlin, September 2014,
- W. Minvielle, Workshop on Multiscale Models of Crystal Defects, Banff, Sept. 2014,
- W. Minvielle, Workshop on "Stochastic and multiscale inverse problems", ENPC, October 2-3, 2014,
- W. Minvielle, MOMAS Conference, Marseille, November 2014,
- M. Rousset, MCQMC 2014, Leuven, Belgium, April 2014.
- M. Rousset, AIMS 2014, Madrid, Spain, July 2014.
- G. Stoltz, workshop "Mathematical and Numerical Analysis of Electronic Structure Models", Berlin, April 2014,
- G. Stoltz, workshop "Theoretical and Numerical Aspects of Quantum Transport", Aalborg, Denmark, April 2014,
- G. Stoltz, 10th AIMS conference on Dynamical Systems, Differential Equations and Applications, Madrid, July 2014,
- G. Stoltz, seminar of University of Lille, september 2014,
- G. Stoltz, MOMAS meeting, Marseille, November 2014,

In addition to the above, some members of the team have been invited for stays in institutions abroad:

- E. Cancès, one month at the University of Minnesota as an Ordway professor.

Members of the team have delivered the following series of lectures:

- C. Le Bris, Göran Gustafsson Lecturer in Mathematics 2014, KTH, Stockholm,
- C. Le Bris, Lectures on Numerical stochastic homogenization, 5 hours, RTG Summer School, The University of Chicago, July 2014,
- C. Le Bris, Lectures on Nonperiodic homogenization of elliptic equations, 6 hours, Berlin Mathematical School, TU Berlin, September 2014,
- C. Le Bris, Graduate course on 'Model reduction', The University of Chicago, 10 hours, Fall 2014,
- T. Lelièvre, 2 hours lecture, ICMS "Computational methods for statistical mechanics", Edinburgh, June 2014,

Members of the team have presented posters in the following events:

- D. Gontier, IPAM summer school on Electronic structure theory of materials and (bio)molecules, Los Angeles, July 2014,
- W. Minvielle, CANUM 2014, Carry le Rouet, April 2014,

Members of the team have participated (without giving talks nor presenting posters) in the following seminars, workshops and international conferences:

- S. Brisard, 8th International Workshop on Parallel Matrix Algorithms and Applications, Lugano, July 2014,
- L. Chamoin, séminaire du Collège de France, December 2014,
- S. Brisard, Journées annuelles NEEDS, Nantes, October 2014,
- S. Lemaire, Summer school on Applied Analysis for Materials, Berlin, September 2014,
- F. Madiot, CANUM 2014, Carry-le-Rouet, April 2014,
- F. Madiot, Inaugural Chicago Summer School in Analysis, Chicago, July 2014,
- F. Madiot, Summer school on Applied Analysis for Materials, Berlin, September 2014,
- W. Minvielle, Inaugural Chicago Summer School in Analysis, Chicago, July 2014.

MATHRISK Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

- R. Dumitrescu: Co-organizer of the young researchers in Mathematics Seminar of Université Paris Dauphine.
- A. Alfonsi: Co-organizer of the working group seminar of MathRisk “Méthodes stochastiques et finance”.
<http://cermics.enpc.fr/~alfonsi/GTMSF.html>

9.1.2. Administrative and scientific responsibilities

- A. Alfonsi: In charge of the Master “Finance and Application” at the Ecole des Ponts.
- B. Jourdain: Head of the doctoral school MSTIC, University Paris-Est
- D. Lamberton: Vice-president for research at Université Paris-Est Marne-la-Vallée
- A. Sulem, Scientific Coordinator for the evaluation of the Inria theme *Stochastic Approaches*, Paris, March 2014.

9.1.3. Scientific events selection

- A. Alfonsi:
 - "Pathwise optimal transport bounds between a one-dimensional diffusion and its Euler scheme", Oberwolfach and Paris 13 seminar in May.
 - "Stochastic Local Intensity Loss Models with Interacting Particle Systems", Bachelier conference in June, Bruxelles.
 - "Dynamic optimal execution in a mixed-market-impact Hawkes price model", SIAM-SMAI Conference on Financial Mathematics: Advanced Modeling and Numerical Methods (June), Workshop "Stochastic analysis for risk modeling", CIRM (September) and Finance and Stochastics seminar, Imperial College.
 - Invitation Imperial College, Antoine Jacquier (19- 20 November)
- V. Bally
 - Statistics, jump processes and Malliavin calculus: recent applications, Barcelona June 2014
 - SPA - 2014, 37th conference on Stochastic Processes and their applications, Buenos Aires, July 2014.
 - invited lecture "Convergence in total variation distance using an interpolation method", Colloquium of the Mathematics department, Ritsumeikan University, Japan, December.
- R. Dumitrescu
 - Inria Junior Seminar, 13 February
 - Séminaire Jeunes Chercheurs, Université Paris Dauphine, 7 March
 - Colloque Mathématiques en Mouvement, Fondation des Sciences Mathématiques de Paris, 28 May
 - Conference Cycle Thématique en Mathématiques Financières, Paris, 20 June
 - Premier Séminaire Bachelier Paris-Londres, Paris, 25-26 September

- R. Elie
 - Colloquium Bachelier, Metabief, January 2014
 - Seminar Ecole Polytechnique, February 2014
 - Seminar Marne la Vallée, March 2014
 - Seminar ETH, Zurich, July 2014
 - Seminar University of Santa Barbara (UCSB), September 2014
 - Seminar University of Southern California, Los Angeles, September 2014
 - Seminar of Risk analysis, Stanford University, October 2014
 - Seminar on stochastics, Humboldt & TU, Berlin, December 2014
 - 2 weeks visit ETH Zurich, July 2014
 - 2 weeks visit, University of Santa Barbara (UCSB), September 2014
- B. Jourdain:
 - Bachelier seminar, IHP, Paris, 4 April 2014 : Capital distribution and portfolio in the mean-field Atlas model
 - Paris 13 university seminar, 21 May 2014: Estimation of the Wasserstein distance between the marginals of a diffusion and its Euler scheme
 - Workshop Computational methods for statistical mechanics, ICMS Edimbourg 2-6 June 2014 : Optimal scaling of the transient phase of Metropolis Hastings algorithms
 - Special session on Stochastic processes and spectral theory for partial differential equations and boundary value problems, AIMS 2014 Madrid, 7-11 July 2014 : A trajectorial interpretation of the dissipations of entropy and Fisher information for stochastic differential equations
 - Workshop Advances in stochastic analysis for risk modeling, CIRM 8-12 September 2014 : Long-time behavior of the mean-field Atlas model
 - London-Paris Bachelier workshop 25-26 september 2014 Paris : Long-time behavior of the mean-field Atlas model
 - Seminar ENSTA-CMAP, 6 October 2014 : Capital distribution and portfolio performance in the mean-field Atlas model
 - Seminar of the chair "Financial risks", 21 november 2014 : Estimation of the Wasserstein distance between the marginals of a diffusion and its Euler scheme
- D. Lambertson
 - Invited to give some lectures in the framework of the workshop in Quantitative Finance at the University of Bologna in May 2014. Title: "A short course on American options".
- A. Sulem
 - Plenary speaker, Mathematics of Systemic Risk, Pacific Institute for the Mathematical Sciences, University of British Columbia, Vancouver, Canada, July 27-31 2014, Title: "Control of interbank contagion under partial information"
 - Plenary speaker at Stochastics in Environmental and Financial Economics, Centre of Advanced Studies CAS of the Norwegian Academy of Sciences and Letters, Oslo, September 2014
 - Workshop "Stochastic analysis for risk modeling", CIRM, Lumigny, 8-12 September 2014. <http://www.cirm.univ-mrs.fr/>, Title: "Dynamic Programming Principle for Combined Optimal Stopping and Stochastic Control with f-conditional Expectation"
 - Bachelier seminar, IHP, Paris, November 7 2014. Title: " Optimal control of interbank contagion under partial information", <https://sites.google.com/site/seminairebachelierparis/>

- Seminar on stochastic methods and Finance, Inria Paris, October 6th, "Control of interbank contagion under partial information", <http://cermics.enpc.fr/~alfonsi/GTMSF.html>

9.1.4. Journal

9.1.4.1. Member of the editorial board

- R. Elie
Associate editor of *SIAM Journal on Financial Mathematics (SIFIN)* (since November 2014)
- D. Lamberton
Associate editor of:
 - Mathematical Finance,
 - ESAIM Probability & Statistics
- A. Sulem
Associate editor of
 - 2011- Present: *Journal of Mathematical Analysis and Applications (JMAA)*
 - 2009- Present: *International Journal of Stochastic Analysis (IJSA)*
 - 2008- Present: *SIAM Journal on Financial Mathematics (SIFIN)*

9.1.4.2. Reviewer

The members of the team reviewed numerous papers for various journals.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

License

- A. Alfonsi, "Modéliser, Programmer et Simuler", second year course at the Ecole des Ponts.
 - R. Dumitrescu, Applied courses (Travaux Dirigés) in Linear Algebra, 35h, L2, Université Paris Dauphine
 - R. Elie, Algebra (UPEMLV, L2), Probability (UPEMLV, L3)
 - B. Jourdain, "Probability theory and statistics", first year, ENPC, France
 - B. Jourdain, Introduction to probability theory", first year, Ecole Polytechnique, France
- Master
- A. Alfonsi , "Calibration, Volatilité Locale et Stochastique", third-year course at ENSTA (Master with Paris I).
 - A. Alfonsi , "Traitement des données de marché : aspects statistiques et calibration", lecture for the Master at UPEMLV.
 - A. Alfonsi , "Mesures de risque", Master course of UPEMLV and Paris VI.
 - V. Bally, "The Malliavin calculus and applications in finance", 30h, Master 2 Finance, Université Marne la Vallée
 - V. Bally, " Interest Rates", 20h, Master 2 Finance, Université Marne la Vallée
 - V. Bally, " Risk methodes in actuarial science", 36h, Master IMIS, Université Marne la Vallée
 - R. Dumitrescu, Applied courses (Travaux Dirigés) Asset pricing by absence of arbitrage opportunities (Master 2 MASEF) , 35h, Université Paris Dauphine
 - R. Elie : Imperfect markets modeling M2 Master MASEF (Paris-Dauphine), Stochastic calculus (UPEMLV, ENSAE); Introduction to mathematical finance (UPEMLV), Statistics for big data and applications (ENPC)

- B. Jourdain, B. Lapeyre, "Monte-Carlo methods in finance", 3rd year ENPC and Master Recherche Mathématiques et Application, University Paris- Est Marne-la-Vallée ;
- J.-F. Delmas, B. Jourdain, "Jump processes with applications to energy markets", 3rd year ENPC and Master Recherche Mathématiques et Application, University Paris- Est Marne-la-Vallée
- B. Jourdain, "Stochastic numerical methods", 3rd year, Ecole Polytechnique, France
- B. Jourdain, "Projects in finance and numerical methods", 3rd year, Ecole Polytechnique, France
- A. Sulem, "Finite difference for PDEs in Finance", Master 2 MASEF, Université Paris IX-Dauphine, Département Mathématiques et Informatique de la Décision et des Organisations (MIDO), 18h.
- A. Sulem, Master of Mathematics, University of Luxemburg, 22 h lectures and responsible of the module "Numerical Methods in Finance".

9.2.2. Supervision

PhD

- J. Mint Moustapha : "Modelling and simulation of vehicle traffic : statistical analysis of insertion models and probabilistic simulation of a kinetic model, Université Paris Est, November 13 2014, Adviser: B. Jourdain [73].
- J. Reygner : "Longtime behaviour of particle systems : applications in physics, finance and PDEs", Université Pierre et Marie Curie, November 24 2014, advisers: B. Jourdain and L. Zambotti [81]

PhD in progress :

- Anis Al Gerbi, "Discretization of stochastic differential equations and systemic risk modeling", Paris-Est Cermics, Adviser: B. Jourdain
- Pierre Blanc, "Price impact on marker orders and limit order books (from Nov. 2012), Ecole des Ponts, Adviser : A. Alfonsi
- Rui Chen, "Stochastic Control of mean field systems and applications to systemic risk, from September 2014, Université Paris-Dauphine, Adviser A. Sulem
- Roxana Dumitrescu, "Stochastic control with nonlinear expectation, stochastic targets and applications to risk optimization", from September 2012, Université Paris-Dauphine, Adviser A. Sulem and R. Elie.
- Paulo Pigato, "Lower bounds for the density of the solution of SDE's under the weak Hörmander condition, and applications in finance", Advisers: V. Bally and A. Dai Pra, University of Padova.
- Victor Rabiet : "On a class of jump type stochastic equations", Université Paris-Est Marne la Vallée, Advisers: V. Bally (75 %) and E. Locherbach
- Clément Rey (from Oct. 2012), " High order discretization schemes for singular diffusions", Ecole des Ponts, Advisers : A. Alfonsi and Vlad Bally.
- Benjamin Schannes, 2014, "Statistical learning and actuarial applications", Adviser: R. Elie.

9.2.3. Juries

- R. Elie: Report on the PhD thesis of Christoph Mainberger, "Essays on Supersolutions of BSDEs and Equilibrium Pricing in Generalized Capital Asset Pricing Models", Humboldt, Berlin
- R. Elie: Report on the PhD thesis of Xuzhe Zhao, Multi-modes switching problems via BSDEs, Université du Mans
- R. Elie: PhD thesis of Adrian Iuga, "Analyse et modélisation du processus de formation de prix à travers les échelles. Market Impact", Université Paris-Est
- R. Elie: HDR: Idris Kharroubi, Représentations et approximations probabilistes en contrôle stochastique et finance mathématique, Université Paris-Dauphine

B. Jourdain: Report on the Habilitation thesis “Contributions à l’étude du comportement en temps long de processus stochastiques”, of Fabien Panloup, Institut de Mathématiques de Toulouse, Université Paul Sabatier, December 4th 2014

B. Jourdain: Report on the Habilitation thesis "Contributions aux méthodes numériques pour le filtrage et l’optimisation stochastique" of Nadia Oudjane, University Paris 7, Defense on 22 January 2015.

A. Sulem : Committee for the recruitment of an Assistant Professor ("Maitre de conférences") in Financial Mathematics and numerical probability, Laboratoire de probabilités (LPMA), Université Paris-Diderot, May 2014.

9.3. Popularization

- A. Sulem, "Nouvelles directions de recherche en Mathématiques financières, Inria Alumni, jam session on Risk, November 25th, Inria, Paris.

MIMOVE Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of organizing committee

- Valérie Issarny is member of the Steering Committee of the ESEC/FSE conference.

8.1.1.2. Chair of technical program committee

- Rachit Agarwal is co-chair of the “Advanced and Trusted Internet of Things and Smart City” track in the 12th IEEE International Conference on Advanced and Trusted Computing (ATC 2015);
- Valérie Issarny is co-programme chair of “New Ideas Track” at ESEC/FSE’15 international conference;
- Animesh Pathak is co-chair of the systems track of the IC3’2015 international conference.

8.1.1.3. Member of technical program committee

- Nikolaos Georgantas is PC member of the following international conferences: AmI’14, DATA’14&’15, ICSOFT-EA’14&’15, ICSOFT-PT’14&’15, ANT’14&’15, SOSE’14&’15, HPCC’14, WETICE’15, CBSE’15, ComPAS’15, Projects Showcase event at STAF’15;
- Nikolaos Georgantas is PC member of the following international workshops: MW4NG’14, ARM’14, OrChor’14, SESoS’14&’15, SERENE’14&’15;
- Raphael De Aquino Gomes is PC member of the following international conferences: CSE’14, and CISIS’15;
- Valérie Issarny is PC member of the following international conferences: CBSE’14, Coordination’14&15, ESSOS’14, FASE’15&16, FSE’14, ICDCS’15, ICSE-SEIP Track’14&15, IFIPTM’15, ISPN’15, Middleware’14&15, SEAMS’14;
- Animesh Pathak is PC member of the following international conferences: HPCC’14, EWSN’14, S-Cube’14, and Sensornets’14.

8.1.2. Journal

8.1.2.1. Member of editorial board

- Nikolaos Georgantas is associate editor of the International Journal of Ambient Computing and Intelligence (IJACI);
- Valérie Issarny is associate editor of the Springer JISA Journal of Internet Services and Applications.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: Nikolaos Georgantas, “Pervasive Service Oriented Computing” as part of “Services Web et Architectures à bases de services” (SWAS), 18 hours (équivalent TD), niveau M2, University of Versailles Saint-Quentin en Yvelines, France;

Master: Animesh Pathak co-taught a M2 COSY level course on “Web sémantique, contenus et usages” at University of Versailles Saint-Quentin-en-Yvelines in Spring 2014; and

Master: Animesh Pathak gave two three-hour guest lectures at CNAM, Paris as part of a M2 level course on embedded systems in Spring 2014.

8.2.2. Supervision

In 2014, the following students successfully defended their PhD:

Sara Hachem, *Service-Oriented Middleware for the Large-Scale Mobile Internet of Things*, UVSQ-EDSTV, defended in February 2014, advised by A. Pathak and V. Issarny.

Additionally, the following PhD theses are currently in progress at the MiMove team:

Emil Andriescu, *Synthèse et déploiement dynamiques de protocoles de médiation pour l'interopérabilité dans les environnements collaboratifs nomades*, started October 2012, UPMC-EDITE, CIFRE Inria-Ambientic, advised by Valérie Issarny and Roberto Speicys-Cardoso (Ambientic).

Benjamin Billet, *Self-adaptive Streaming Middleware for the Internet of Things*, started October 2012, UVSQ-EDSTV, advised by Valérie Issarny

Georgios Bouloukakis, *Runtime adaptation of middleware connectors for emergent mobile systems*, started October 2013, UPMC-EDITE, advised by Nikolaos Georgantas and Valérie Issarny.

Also, Valérie Issarny is co-advising with Ansgar Radermacher from CEA-LISE, the PhD thesis of Amel Belaggoun on *Adaptabilité et reconfiguration des systèmes temps-réel embarqués*; this is a PhD from UPMC-EDITE with the research being undertaken at CEA-LISE.

8.3. Popularization

- Benjamin Billet was invited to speak at a one-day Android tutorial event organized by the ARAMIS business network at Lyon.

8.4. Other Academic Services

8.4.1. Institutional Commitment

- Nikolaos Georgantas is member of the PhD monitoring committee at Inria Paris-Rocquencourt;
- Nikolaos Georgantas is member of the Inria PhD scholarship selection committee at Inria Paris-Rocquencourt;
- Valérie Issarny is elected member of the *Commission d'Evaluation Inria*;
- Valérie Issarny is scientific coordinator of Inria@Silicon Valley;
- Animesh Pathak served on the Inria assistant selection committee for Lille and Rennes centers.

8.4.2. Collective Responsibilities outside Inria

- Valérie Issarny and Nikolaos Georgantas are members of the IFIP Working Group 2.14/6.12/8.10 on Services-oriented Systems;
- Valérie Issarny is member of the IFSTTAR Scientific Council & “Commission d'évaluation des chercheurs”;
- Valérie Issarny is member of the GDR GPL scientific council.

MOKAPLAN Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of the organizing committee

Guillaume Carlier was organiser of the RICAM special semester on Calculus of Variation <http://www.ricam.oeaw.ac.at/specsem/specsem2014/>. This was a two weeks event. The first week was devoted to original minicourses on special research topics that are particularly active: Numerical methods for optimal transport (J.-D. Benamou), Multi-marginal transport problems (L. de Pascale) and Gradient Flows (J.-A. Carrillo). The second week, a workshop was organized. This event gathered more than 50 participants with a majority of young researchers (more than 30).

8.1.2. Scientific events selection

8.1.2.1. Member of the conference program committee

Guillaume carlier is in the scientific committee for SMAI 2015.

8.1.2.2. Reviewer

Vincent Duval has reviewed several contributions for the *Scale Space and Variational Methods* SSVM 2015 conference.

8.1.3. Journal

8.1.3.1. Member of the editorial board

Guillaume carlier is member of the editorial Board of "Journal de l'Ecole Polytechnique" and co-editor of "Mathematics and Financial Economics".

8.1.3.2. Reviewer

Vincent Duval has reviewed several papers for the following journals:

- SIIMS (SIAM Journal on Imaging Sciences)
- JMAA (Journal of Mathematical Analysis and Applications)
- IPol (Image Processing Online)
- JVCJ (Journal of Visual Communication and Image Representation)

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

In 2014, Guillaume Carlier gave an advanced course on Mean-Field Games (M2 EDP-MAD and Masef) and a master course (M1) on dynamic programming at Dauphine

Master : Guillaume Carlier, Mean-Field Games, M2 EDP-MAD , U. Paris- Dauphine.

Master : Guillaume Carlier, Dynamic Programming , M1 , U. Paris- Dauphine.

8.2.2. Supervision

PhD in progress: Quentin Denoyelle, "Analyse théorique et numérique de la super-résolution sans grille", 2014, Gabriel Peyré and Vincent Duval.

PhD in progress : Roméo Hatchi , "Analyse mathématique de modèles de trafic congestionné", 2012, Guillaume Carlier.

PhD in progress : Maxime Laborde , " Dynamique des systèmes de particules en interaction, approche par flots de gradient et applications", 2013 , Guillaume Carlier

PhD in progress : Luca Nenna , "Méthodes numérique pour le transport optimal multimarge" , 2013, Jean-David Benamou et Guillaume Carlier.

PhD in progress: Quentin Denoyelle, "Analyse théorique et numérique de la super-résolution sans grille", thèse commencée le 1er octobre 2014, supervised by Gabriel Peyré (main supervisor) and Vincent Duval (co-supervisor).

8.2.3. Juries

Guillaume carlier was in the Ph.D. committee of Serena Guarino (Pisa) and Miryana Grigorova (Paris 7).

MUSE Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of steering/executive committee

- R. Teixeira, Vice-chair of ACM SIGCOMM (since Jun. 2013).
- R. Teixeira, member of the steering committee of the ACM Internet Measurement Conference (since Nov. 2009)

9.1.2. Scientific events selection

9.1.2.1. Chair of selection committee

- R. Teixeira, Workshop co-chair of ACM SIGCOMM 2015.

9.1.2.2. Member of conference program committee

- R. Teixeira, ACM SIGCOMM 2014
- R. Teixeira, ACM SIGCOMM Poster and Demo 2014
- R. Teixeira, ACM CoNEXT 2014

9.1.3. Journal

9.1.3.1. Member of editorial board

- R. Teixeira, Editor of IEEE/ACM Transactions on Networking (since Feb. 2011)
- R. Teixeira, Area editor of ACM Sigcomm Computer Communication Review (Feb. 2010 – July 2014)

9.1.3.2. Reviewer

- A.-K. Pietilainen, ACM Transactions on Multimedia Computing; Elsevier Pervasive and Mobile Computing

9.1.4. Tutorials and invited presentations

- R. Teixeira, “Internet measurements: topology discovery and dynamics”, tutorial at the Rescom summer school, Corsica, May 2014.
- A.-K. Pietilainen and R. Teixeira, “Measurements close to users”, tutorial at the 4th PhD School on Traffic Monitoring and Analysis (TMA), London, April 2014.
- R. Teixeira, “Measuring Internet Experience from Home Networks”, seminar at Federal University of Rio de Janeiro (UFRJ) and at Federal Univeristy of Minas Gerais (UFMG), Brazil, October 2014. Seminar at University of Washington, USA, November 2014.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: Renata Teixeira, “Methodology for research in networking”, 21.5h eqTD, M2, UPMC, France

9.2.2. Supervision

PhD: Oana Goga, “Matching User Accounts Across Online Social Networks: Methods and Applications”, EDITE, May 21, 2014, advisor: Renata Teixeira

PhD in progress:

- Sara el Aouad, “Improving the quality of recommendation using semi-structured user feedback”, May 2014, advisors: C. Diot and R. Teixeira
- Diego da Hora, “Crowdsourced Home Network Diagnosis”, February 2014, advisors: C. Diot and R. Teixeira
- Giuseppe Scavo, “Exploiting Network Content-awareness to provide novel added value services”, November 2013 advisors: Z. Ben-Houidi and R. Teixeira

9.2.3. Juries

Renata Teixeira: member of PhD committee of Zachary Scott Bischoff (Northwestern University, 2014) and Srikanth Sundaresan (Georgia Tech, 2014)

MUTANT Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events selection

8.1.1.1. Chair of conference program committee

Jean-Louis Giavitto was co-chair of the SCW 2014 the Spatial COmputing Workshop, co-located with AAMAS, May 2014, Paris.

8.1.1.2. Member of the conference program committee

Jean-Louis Giavitto has participated in the program committee of the following workshop and conferences: BIPC special track at 8th International Conference on Bio-inspired Information and Communications Technologies - BICT 2014, December, 2014, Boston, MA, USA; MeCBIC 2014 7th Workshop on Membrane Computing and Biologically Inspired Process Calculi, September 2014, Bucharest, Romania; SASO Eighth IEEE International Conference on Self-Adaptive and Self-Organizing Systems - London, September 2014; JIM 2014 Journée d'informatique Musicale - Bourges - mai 2014; Journées nationales du GDR GPL 2014, juin 2014, CNAM Paris.

Florent Jacquemard has participated in the program committee of the 6th International Symposium on Symbolic Computation in Software Science (SCSS 2014) and the conférence Journées d'informatique Musicale (JIM 2014).

8.1.1.3. Reviewer

The members of the team regularly participate as reviewers for IEEE ICASSP, ACM Multimedia Conferences, Sound and Music Computing, International Computer Music Conference (ICMC), Digital Audio Effects Conference (DAFx), European Joint Conferences on Theory and Practice of Software (ETAPS), Federated Logic Conference (FLoC, federating CADE, LICS, RTA), and more.

8.1.2. Journal

8.1.2.1. Member of the editorial board

Jean-Louis Giavitto is the redactor-in-chief of TSI (Technique et Science Informatiques) published by Lavoisier.

8.1.2.2. Reviewer

The members of the team are regular reviewers for IEEE Transactions on topics related to Machine Learning in Signal Processing (IEEE TSALP, TPAMI, Multimedia journals), Theoretical Computer Science related journals (TCS, MFCS, LMCS, JLAP, IPL), and Computer Music related journals (CMJ, JNMR).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Licence : Clement Poncelet, Environnement de développement, 40h, L3, UPMC, France.
- Licence : Clement Poncelet, Ateliers de Recherche Encadrée - ARE, 20h, L1, UPMC, France.
- Licence : José Echeveste, Structures discrètes, 30h, L3, UPMC, France.
- Licence : Arshia Cont, Sound Engineering and New Technologies - Paris Superior Conservatory, 2h/week.

8.2.2. Supervision

- PhD in progress: José Echeveste, Accorder le temps de la machine et celui du musicien, started in october 2011, supervisor: Arshia Cont and Jean-Louis Giavitto.
- PhD in progress: Clément Poncelet, Formal methods for analyzing human-machine interaction in complex timed scenario. Started in october 2013, supervisor: Florent Jacquemard.
- PhD in progress: Philippe Cuvillier, Probabilistic Decoding of strongly-timed events in realtime, supervisor: Arshia Cont.

8.2.3. *Juries*

Jean-Louis Giavitto was reviewer of the Habilitation of Arnaud Banos (Sorbonne – Paris I, Pour des pratiques de modélisation et de simulation libérées en géographie et SHS) and examiners for two PhDs: Mariem Miladi (SupMeca, Modélisation géométrique et mécanique pour les systèmes mécatroniques) et Adrien Basso-Blandin (Université d’Evry, Conception d’un langage dédié à la conception de fonctions biologiques de synthèse par compilation de spécifications comportementales).

Arshia Cont has acted as Reporter for two Habilitation juries in 2014, for Cédric Févotte (University of Nice) on Non-Negative Matrix Factorization and Its Applications, and for Brunno Bossis (University of Rennes 2) on Musicological Tools for analysis of Live Electronic Music.

8.2.4. *Institutional commitment*

Jean-Louis Giavitto is in the management team of the GDR GPL (Genie de la programmation et du logiciel), responsible with Etienne Moreau of the “Languages and Verification” pole of the GDR. He is also an expert for the ANR DEFI program and a reviewer for FET projects for the UC.

Florent Jacquemard is member of the IFIP WorkingGroup 1.6 on Term Rewriting.

Arshia Cont is the director of *Research/Creativity Interfaces* at Ircam, in charge of coordinating scientific and artistic activities of the institution and dissemination of its software and community through Ircam Forum.

Arshia Cont is board member of ICMA (International Computer Music Association) since 2014.

8.3. Popularization

Arshia Cont was invited to a **TEDx Talk** in October 2014 on *Human-Computer Musicianship* that attracted more than 12 thousand podcasts according to organisers.

Arshia Cont was invited to participate in CNRS’s 2nd edition of “Les Fondamentales” Science and Society event in Grenoble, in a session dedicated to **Science and Music on the same Score**.

Arshia Cont was invitee to the BFM Business Program on *Future of Sound*.

Arshia Cont was featured in the June Edition of *Usbek et Rica* magazine.

MuTant team participated in the 2014 edition of *Futur en Seine* festival and showcased **collaboration with Orchestre de Paris** in a public event.

Article on Antescofo by Arshia Cont in the December 2014-January 2015 edition of the popular science magazine “Dossier de La Recherche”.

José Echeveste, Arshia Cont and Jean-Louis Giavitto participated to the colloquium “La musique en temps réel” in the festival Musica, Strasbourg, september 2014.

Jean-Louis Giavitto participated to the colloquium “Le calcul et le temps, colloque de philosophie de l’informatique” Université Jean Moulin (Lyon 3), novembre 2014. He was invited on several seminars outside computer sciences: EPFL - ArchiZoom, “computational morphogenesis” in the context of the architecture exhibition “Animal ?” (april 2014); the elmlalfructidor art school in Chalons, “space and the formalization of musical processes” (april 2014); CNSMD Lyon and the Ecole Normale Lyon, “Du temps écrit au temps produit” with Julia Blondeau (april 2014); CISEC (club Inter-associations – AAAF, SEE, SIA – des Systèmes Embarqués Critiques), “Temps Réel en musique : Antescofo” (Toulouse June 2014).

Florent Jacquemard participated to the Inria seminar “1/2 hour of science” in July 2014, with a talk on Testing and Verification of interactive music systems.

MYCENAE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. Member of the organizing committee:

- **Kick-off Meeting of the GdR REPRO**, April 7th, 2014
F. Clément together with Olivier Kah (CNRS), Florian Guillou (INRA), Yves Combarous (CNRS) and Joëlle Cohen-Tannoudji (University Paris VII).
- **Second workshop “Biologie & Mathématiques sur la Montagne”**, October 28, 2014.
J. Touboul together with : Gérard Berry (Collège de France), Amaury Lambert (UPMC), Alain Prochiantz (Collège de France)
- Workshop **Multi-scale models, slow-fast differential equations, averaging in ecology and neuroscience**, November 17-21, 2014
M. Desroches, together with Olivier Faugeras (Inria Sophia-Antipolis Méditerrané), Claude Lobry (Nice University) and Tewfik Sari (IRSTEA), as a part of a thematic semester on mathematical ecology (July-December 2014), Bernoulli Centre of the EPFL (Lausanne, Switzerland).

8.1.2. Journal

8.1.2.1. Reviewer:

Electronic Journal of Probability, Physica D, Frontiers in Neuroscience, Journal of Statistical Physics, Mathematical Biosciences, Mathematics and Computers in Simulation, Nonlinear Dynamics, Nonlinearity, SIAM Journal on Applied Dynamical Systems, SIAM Journal on Applied Mathematics

8.1.3. Participation in committees and examination boards

8.1.3.1. F. Clément:

- member of the direction board of the **GdR REPRO** (Integrative and translational approaches of human and animal reproduction)
- appointed member of the scientific board of the BCDE (Cell Biology, Development and Evolution) ITMO (Multi OrganizationThematic Institute) of the French National Alliance for Life and Health Sciences <http://www.aviesan.fr/en>
- Inria Research Director open competitions (admission)
- Selection committee for the Assistant Professor position no 4240, 26-MC-0375 in Université Pierre & Marie Curie

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

M. Desroches

M1 course on “Mathematical and Computational Neuroscience” as part of the Master program in Bioinformatics (BIM) of the University Pierre et Marie Curie (UPMC, Paris)

This teaching has been organised over a five-week period (January-February 2014) with a total of 30 hours, including lectures, example classes and computer labs (2 hours per week each). This first half of the course was focused on an introduction to mathematical slow-fast models of spiking and bursting neurons using bifurcation theory, slow-fast dissection and numerical analysis (simulation and continuation) with the software package XPPAUT.

8.2.2. Supervision

Benjamin Aymard, Numerical study of multiscale non conservative transport equations modeling cell kinetics [14], Université Pierre & Marie Curie, October 10th, 2014, supervisors: Marie Postel and Frédérique Clément.

Elif Köksal Ersoz, Synchronization of GnRH neurons: a multiscale mathematical study, since November 2013, Université Pierre & Marie Curie, supervisors: Frédérique Clément and Jean-Pierre Françoise, with the involvement of Mathieu Desroches.

Lucile Megret, Mathematical analysis of complex oscillations in models with multiple time scales, since October 2013, Université Pierre & Marie Curie, supervisors: Jean-Pierre Françoise and Frédérique Clément, with the involvement of Mathieu Desroches.

Kim Long Tran, Reduction and calibration of multiscale models for structured cell populations, since October 2014, Université Pierre & Marie Curie, supervisors: Marie Postel and Frédérique Clément.

Luis Carlos García del Molino, Dynamics of randomly connected networks and spectral theory of random matrices, since September 2012, Université Denis Diderot, supervisor: Khashayar Pakdaman (Jacques Monod Institute), co-supervisor: Jonathan Touboul.

Cristóbal Quiñinao, Mean-field limits in non fully connected networks and noise-induced synchronization, since September 2012, Université Pierre & Marie Curie, supervisor: Benoît Perthame, co-supervisors: Stéphane Mischler (CEREMADE) and Jonathan Touboul.

8.2.3. Juries

J. Touboul: evaluation of the ENS Ulm PhD scholarships

8.3. Popularization

- M. Desroches is section-chief editor of the media gallery of DSWeb, a website dedicated to dynamical systems <http://www.dynamicalsystems.org/pi/>.
- Participation to the scientific popularization book “La Reproduction animale et humaine” [29]

PARKAS Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

Albert Cohen was the general chair of PPOPP 2015, and will be the general chair of PLDI 2017 (associated with ECRC).

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committee

Albert Cohen was the program chair of CC 2014, the TPC chair of the DAC 2014 ESS1 subcommittee, and the program chair of ARCS 2015.

8.1.2.2. Member of the conference program committee

Albert Cohen was a member of the PC of PLDI 2014, of the ERC of PLDI 2015 and PACT 2015, of the ERC of ASPLOS 2014, PPOPP 2014 and ICS 2014.

Marc Pouzet was a member of the PC of DAC (Design Automation Conference) 2014, EOOLT (Equation-Based Object-Oriented Modeling Languages and Tools) 2014, AFADL (Approches Formelles dans l'Assistance au Développement de Logiciels) 2014.

Francesco Zappa Nardelli was a member of the PC of PPOPP (Principles and Practice of Concurrent Programming) 2014 and ESOP (European symposium on programming) 2014.

8.1.3. Journal

8.1.3.1. Member of the editorial board

Albert Cohen is an associate editor of ACM TACO and IJPP (Springer).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: A. Cohen: "Operating Systems Principles and Programming" (M1), 38h, École Polytechnique, France

Master: A. Cohen & F. Zappa Nardelli, "Semantics, languages and algorithms for multicore programming", Lecture, 9h+14h, M2, MPRI: Ecole normale supérieure and Université Paris Diderot, France

Master : M. Pouzet & T. Bourke: "Synchronous Systems" (M2), Lectures and TDs, ENS, France

Licence: A. Cohen, "Components of a Computing System Introduction to Computer Architecture and Operating Systems" (L3), 44h, École Polytechnique, France

Licence : F. Zappa Nardelli: "Introduction à l'informatique" (L3), TDs, 40h, École Polytechnique, France

Licence : M. Pouzet: "Operating Systems" (L3), Lectures, ENS, France.

Licence : J. Vuillemin & T. Bourke, "Digital Systems", Lectures and TDs, ENS, France

Marc Pouzet is Director of Studies for the CS department, at ENS.

8.2.2. Supervision

HdR : F. Zappa Nardelli, Reasoning between programming languages and architectures, ENS, January 2014

PhD : F. Li, Compiling for a multithreaded dataflow architecture: algorithms, tools, and experience. Université Pierre et Marie Curie - Paris VI, May 2014

PhD in progress : Guillaume Baudart, 2nd year, supervised by T. Bourke and M. Pouzet

PhD in progress : Adrien Guatto, 4th year, supervised by T. Bourke and A. Cohen and M. Pouzet

PhD in progress : Robin Morisset, 2nd year, supervised by F. Zappa Nardelli

M2 Internship : Ulysse Beaugnon (MPRI), supervised by A. Cohen and M. Pouzet.

M2 Internship : Basile Clement (MPRI), supervised by A. Cohen and M. Pouzet.

8.2.3. Juries

- Albert Cohen was a reviewer in the PhD thesis committees of Jarryd Beck (2015, U. New South Wales, Australia), Pranav Tendulkar (2014, U. Grenoble), Cedric Nugteren (2014, T. U. Eindhoven, The Netherlands).
- Albert Cohen was a president in the PhD thesis committees of Sofiane Lagraa (2014, U. Grenoble), Bruno Bodin (2014, UPMC).
- Albert Cohen was examiner in the PhD thesis committee of Victor Lomüller (2014, U. Grenoble).
- Marc Pouzet was president of the Jury for the habilitation of Anne Bouillard, April 8, 2014.
- Marc Pouzet was jury member of the PhD. thesis of Arlen Cox, University of Colorado, Boulder, November 17, 2014.
- Marc Pouzet was member of the committee for the AERES evaluation of the Lab. of SupAero (ISAE), Toulouse, Nov. 2014.
- Marc Pouzet was member of the Prix de thèse du GDR GPL (Génie de la Programmation et du Logiciel).

8.3. Popularization

T. Bourke hosted a tutorial by Makarius Wenzel at ENS Ulm on the Isabelle proof assistant.

PL.R2 Project-Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Collective responsibilities

Pierre-Louis Curien was a member of the Conseil Scientifique of the INSII (CNRS), until September 2014. He is also a member of the Conseil Scientifique of CIRM (since June 2013).

7.1.2. Editorial activities

Pierre-Louis Curien is co-editor in chief of Mathematical Structures in Computer Science.

Frédéric Loulergue is a member of the editorial board of Scalable Computing: Practice and Experience, and Technique et Science Informatiques.

Hugo Herbelin, Pierre Letouzey and Matthieu Sozeau are co-editors of the post-proceedings of the conference TYPES 2014 which was held in Paris in May.

7.1.3. Program committees and organising committees

Alexis Saurin has been a PC member of GaLoP 2014 (International Workshop on Games and Logic for Programming) which took place during ETAPS 2014 in Grenoble, as well as FSTTCS 2014, which took place in Mumbai in December. He is in the PC of WoC 2015, the workshop on continuations, affiliated with ETAPS.

Alexis Saurin is member of the Education committee of the ACM Special Interest Group on Logic (SIGLOG, <http://siglog.hosting.acm.org>).

Hugo Herbelin, Pierre Letouzey and Matthieu Sozeau co-organised and co-chaired the TYPES'14 conference in Paris in May.

Yves Guiraud and Philippe Malbos were among the organisers of the 5-week programme Mathematical Structures of Computation, held in Lyon in January-February 2014, and supported by the Labex MILYON. They were also organisers of the second week, Algebra and Computation, while Pierre-Louis Curien and Hugo Herbelin organised the first week, Recent Trends in Type theory.

Yves Guiraud is in the organising committee and PC co-chair of Higher-Dimensional Rewriting and Applications (HDRA), a workshop of the International Conference on Rewriting, Deduction and Programming (RDP) 2015.

Pierre-Louis Curien, Hugo Herbelin and Paul-André Melliès were the organisers of the IHP trimester Semantics of proofs and certified mathematics (cf. highlights). They also organised a spring school at CIRM preceding the trimester, in April 2014.

Pierre-Louis Curien and Hugo Herbelin are members of the steering committee of the conference Typed Lambda Calculi and Applications (TLCA).

Pierre-Louis Curien is a member of the steering committee of the international workshop Games for Logic and Programming Languages (GaLop).

Frédéric Loulergue is a member of the steering committee of the international symposium on High-Level Parallel Programming and Applications (HLPP), he is a member of the program committee of the International Conference on Computational Science (ICCS'15).

Yann Régis-Gianas, Pierre Letouzey, Matthieu Sozeau are the organisers of the “Ecole de Printemps d’Informatique Théorique 2015” about proof of programs. This school has been accepted as a “Ecole Théorique” of the CNRS.

Matthieu Sozeau is a member of the steering committee of the Dependently Typed Programming international workshop (DTP).

Matthieu Sozeau co-organised and chaired the first Coq for Programming Languages (CoqPL) workshop, collocated with POPL'15 in Mumbai, India, in January 2015.

7.1.4. Jury participation

Alexis Saurin has been a member of the Jury for LMFI Master.

Yann Régis-Gianas has been a member of the “Comité de Sélection” for an assistant professor position at the University of Paris Sud.

Pierre-Louis Curien has been a member of the “Comité de Sélection” for a professor position in computer science at the University Paris Diderot.

Matthieu Sozeau has been a member of the Student Research Competition Jury at ICFP 2014 in Gothenburg.

7.1.5. Invited talks

P.-L. Curien gave an invited talk at the workshop “Algebra and Computation” in Lyon (mentioned above).

J.-J. Lévy wrote a paper for P.-L. Curien’s Festschrift Volume, entitled “On the length of Standard Reductions in the Lambda Calculus” [2] (corresponding to his talk back in September 2013 in Venice at the anniversary meeting in his honour).

P.-L. Curien and J.-J. Lévy participated to Luca Cardelli’s Festschrift at Microsoft Research in Cambridge, UK (September 8-9). They gave talks entitled “Around formal parametricity” and “Simple Proofs for Simple Programs”, respectively.

J.-J. Lévy participated to Matthew Hennessy’s Festschrift at IMD in Lucca, Italy (October 15-16). He gave a talk on “Simple Proofs for Simple Programs”.

J.-J. Lévy and A. Saurin participated to “Les Journées LAC (Logique, Algèbre, Calcul)” in Chambéry, France (November 20-21). They gave talks on “Simple Proofs for Simple Programs” and “On the dependencies of logical rules”, respectively.

J.-J. Lévy participated to “The 2nd Locali workshop” between Institute of Software, Chinese Academy of Sciences and Inria/Paris 7 (November 24-26). He gave a talk on “Simple Proofs for Simple Programs”.

M. Sozeau gave an invited talk on “Universe Polymorphism: Subtyping and unification” at the XIXth Agda meeting in Paris (May 2014).

L. Patey has been invited to give a talk at the Workshop on Computability Theory 2014, at a special session of the conference Computability in Europe 2015 and to a Dagstuhl Seminar 2015.

7.1.6. Presentation of papers

Philippe Malbos has presented [31] at IWC 2014.

Marc Lasson has presented [24] at MFPS 2014.

Hugo Herbelin has presented his joint work with Danko Ilik on the computational content of Gödel’s completeness theorem at the workshop PSC 2014.

Matthieu Sozeau has presented [27] at ITP 2014 and [28] at UNIF 2014.

Ludovic Patey received the best student paper award for his paper about dichotomy theorems and an extended version of his paper submitted to the Computability journal has been accepted.

7.1.7. Other presentations

Yann Régis-Gianas gave a talk about Coq at the PPS-LIAFA “pedagogical” meeting.

Frédéric Loulergue gave a short talk at JFLA’15 and a talk at the International Symposium on Symbolic and Numeric Algorithms for Scientific Computing SYNASC’14 (Timisoara).

Matthieu Sozeau gave talks on the development of Coq at the Coq Workshop in Vienna (July 2014) and at the CoqPL workshop in Mumbai (Jan 2015). He also gave a talk on generalised rewriting strategies at TYPES 2014 and at the Coq Workshop.

7.1.8. Talks in seminars

Lourdes González gave a talk on “Incrémentalité dans le calcul” during the Journées PPS, September 2014.

Marc Lasson gave talks about parametricity for dependent types at the TYPES 2014 workshop, at the journées nationales du GDR IM 2014, and the following team seminars: séminaire LCR, LIPN, Paris 13; séminaire Logique et Interactions, Institut de Mathématiques de Marseille; séminaire d’équipe ACADIE, IRIT Toulouse. He also presented his plugin during a Coq working group held in Paris.

Eric Finster gave a talk on Homotopy Type Theory at the “Notions of Identification” seminar at L’équipe ERC Philosophy of Canonical Quantum Gravity, Paris 7 and a talk entitled “Opetopic Diagrams as a Language for Higher Categorical Proofs” at the IHP Trimester in Paris.

Alexis Saurin gave a talk in PARSIFAL seminar at LIX on dependency and correctness of proof-nets.

Matthieu Sozeau gave a talk at the Deducteam seminar at Inria (place d’Italie) on the formalisation of the groupoid model of type theory.

Pierre-Louis Curien gave a seminar talk at the University of Talca (Chile) on “Revisiting the categorical interpretation of type theory” (March).

7.1.9. Attendance to conferences, workshops, schools,...

Lourdes González attended TYPES 2014 in Paris and the IHP trimester “Semantics of proofs and certified mathematics”.

Marc Lasson attended TYPES 2014 in Paris, the IHP trimester, and the Homotopy Type Theory Workshop held at the Mathematical Institute, University of Oxford, in November 2014.

Frédéric Loulergue attended SYNASC 2014 in September (Timisoara), and the JFLA’15 in Val d’Ajol.

Eric Finster attended the IHP Trimester in Paris, and the Homotopy Type Theory Workshop at Oxford.

Alexis Saurin and Matthieu Sozeau attended JFLA 2014, the IHP trimester, Types 2014 and FLOC 2014.

Matthieu Sozeau attended the Heidelberg Laureate Forum in September 2014 and ICFP’14.

7.1.10. Groupe de travail *Théorie des types et réalisabilité*

This is one of the working groups of PPS, jointly organised by Hugo Herbelin and Paul-André Mellès, since September 2009. It is held weekly. Matthieu Sozeau joined the organisation this year.

Internal speakers this year were Eric Finster on Higher Dimensional Syntax and Ludovic Patey on an Introduction to reverse mathematics. The external speakers were Jean-Baptiste Jeannin (CMU), Matthias Puech (McGill University), Sylvain Schmitz (ENS Cachan), Timothy Bourke (Inria and ENS), Cătălin Hrițcu (Inria), Pierre-Evariste Dagand (Inria), Carsten Schürmann (ITU Copenhagen), Conor McBride (Strathclyde University), Nicolas Pouillard (IT University of Copenhagen, Denmark), Alois Brunel (LIPN).

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Licence: Lourdes González has a temporary research and teaching position (A.T.E.R) at University Paris 7 for the academic year 2014–2015. During the first semester (Sep-Dec 2014) she was in charge of TP (Travaux pratiques, 24 hours) on the subject “Principes de fonctionnement des machines binaires” (L1).

Licence: Étienne Miquey was in charge of TP (Travaux pratiques, 24 hours) in the course “Introduction à la programmation” (L1) at University Paris 7 during the first semester 2014/15.

Master: Pierre-Louis Curien teaches in the course “Models of programming languages: domains, categories, games” of the MPRI (together with Thomas Ehrhard and Paul-André Melliès).

Master: Alexis Saurin taught, jointly with Christine Tasson, a Master 2 course in “Logique Mathématique et Fondements de l’Informatique” (LMFI), Université Paris Diderot, entitled “Lambda-calcul: des abstractions aux applications”. He taught about 30H. In addition, Saurin chairs LMFI M2 from september 2013.

Master: Yann Régis-Gianas took part in the MPRI course entitled “Type systems”: he taught 12 hours about generalised algebraic data types, higher-order Hoare logic and dependently typed programming.

MOOC: In collaboration with Roberto Di Cosmo and Ralf Treinen, Yann Régis-Gianas wrote a proposal for a MOOC about the OCaml programming language. The proposal has been accepted and the course is in preparation.

Master: Matthieu Sozeau teaches in the MPRI course on Advanced uses of Proof Assistants (12 hours + a project), together with Assia Mahboubi (Inria SpecFun).

Master: Matthieu Sozeau taught an introductory course on software verification to M2 Pro students at University Paris 7 during the first semester (Lectures + Practical Works, 20h).

7.2.2. Supervision

Internship: Alexis Saurin has supervised the L3 internship of Paul Fermé.

Internship: Alexis Saurin has supervised the M1 internship of Simon Lunel.

Internship: Alexis Saurin has supervised, with David Baelde, the M2 internship of Amina Doumane.

Internship: Yann Régis-Gianas has supervised the M2 internship of Thibaut Girka.

Internship: Yann Régis-Gianas has supervised the M2 internship of Thomas Refis.

Internship: Yann Régis-Gianas has supervised the M1 internship of Grégoire Duchêne.

Internship: Yann Régis-Gianas has supervised the M1 internship of Alexandre Ly.

Internship: Matthieu Sozeau has supervised the M2 internship of Philipp Haselwarter.

PhD in progress: Lourdes del Carmen González Huesca, Un langage de tactiques typées pour Coq, December 2011, supervised by Hugo Herbelin and Yann Régis-Gianas.

PhD in progress: Guillaume Claret, Programmation avec effets en Coq, September 2012, supervised Hugo Herbelin and Yann Régis-Gianas.

PhD in progress: Pierre-Marie Pédro, Logique linéaire et types dépendants, september 2012, supervised by Alexis Saurin and Hugo Herbelin.

PhD in progress: Thibaut Girka, Sémantique différentielle, October 2014, supervised by Roberto DiCosmo and Yann Régis-Gianas.

PhD in progress: Cyrille Chenavier, Méthodes algébriques pour la réécriture linéaire, supervised by Yves Guiraud and Philippe Malbos.

PhD in progress: Maxime Lucas, Résolutions polygraphiques cubiques et théorie de Garside, supervised by Yves Guiraud and Pierre-Louis Curien.

PhD in progress: Jovana Obradović, Langages pour la description de différentes sortes d’opérades, supervised by Pierre-Louis Curien.

PhD in progress: Amina Doumane, Ludique, automates, points fixes, supervised by Alexis Saurin, David Baelde and Pierre-Louis Curien.

PhD in progress: Étienne Miquey, Réalisabilité classique et effets de bords, September 2014, supervised by Hugo Herbelin and Alexandre Miquel.

7.2.3. *Juries*

Pierre-Louis Curien was president of the thesis juries of Aloïs Brunel (Univ. Paris 13), Guillaume Jaber (Univ. Nantes), Valentin Blot (ENS Lyon), and Marc Bagnol (Univ. Marseille).

Pierre-Louis Curien was president of the habilitation jury of Philippe Malbos (Univ. Lyon 1).

He is a referee for the habilitation theses of Olivier Serre (LIAFA), Russ Harmer (ENS Lyon), and Paul-André Melliès.

Frédéric Loulergue was president of the thesis juries of Héléne Coullon (Univ. Orléans), Mouhamadou Sakho (Univ. Orléans) and Nader Khammassi (ENSTA Bretagne) ; referee for the theses of Nuno Gaspar (Univ. Nice), Nader Khammassi (ENSTA Bretagne) and Charif Mahmoudi (Univ. Paris-Est Créteil) ; supervisor of the thesis of Thomas Pinsard (Univ. Orléans).

7.3. Popularization

Pierre-Louis Curien wrote the editorial of a special “hors série” issue of the information letter of The Fondation Sciences Mathématiques, entitled “Des preuves et des programmes”, may 2014. He wrote an introductory article “Formalisation mathématique, certification logicielle, même combat!” in the journal *Gazette des Mathématiciens* 142, 83-86 (octobre 2014).

Lourdes González-Huesca and Étienne Miquey took part in the animation of the “Fête de la Science” event at the University Paris 7.

Étienne Miquey took part in the animation of several activities about mathematics in elementary and high schools of Paris.

Yann Régis-Gianas co-organised the “Journée Francilienne de Programmation”, a programming contest between undergraduate students of three universities of Paris (UPD, UPMC, UPS).

Yann Régis-Gianas organised the “Fête de la Science” event for the computer science department of the University Paris 7.

Yann Régis-Gianas and Pierre Letouzey took part in the “Salon Culture et Jeux mathématiques” at Saint Sulpice, Paris.

Yann Régis-Gianas gave several conferences about “What is programming?” in elementary and high schools of Paris.

POLSYS Project-Team

8. Dissemination

8.1. POLSYS seminar

Our seminar hosted over twenty invited speakers in 2014.

<http://www-polsys.lip6.fr/Seminar/index.html>

8.2. Promoting Scientific Activities

8.2.1. Scientific events organisation

8.2.1.1. member of the organizing committee

Dongming Wang was involved in the organization of the following conferences

- Third International Seminar on Program Verification, Automated Debugging and Symbolic Computation (PAS 2014) (Vienna, Austria, July 17-18, 2014).
- Software for Geometry at the 4th International Congress on Mathematical Software (ICMS 2014) (Seoul, Korea, August 5-9, 2014).

8.2.2. Scientific events selection

8.2.2.1. member of the conference program committee

Ludovic Perret was member of the program committee of the following conference:

- Eurocrypt 2014 is the 33rd Annual International Conference on the Theory and Applications of Cryptographic Techniques (11 - 15 May 2014 Copenhagen, Denmark)

Mohab Safey El Din was member of the program committee of the following conferences:

- 39-th Symposium on Symbolic and Algebraic Computation (ISSAC 2014) (Kobe, Japan, July 23-25, 2014)
- ACM Symbolic-Numeric Computation Conference (SNC 2014) (Shanghai, China, July 28-31, 2014)

Jean-Charles Faugère and Ludovic Perret were involved in a special Issue of the Journal Of Symbolic Computation (JSC) devoted to Mathematical and Computer Algebra Techniques in Cryptology.

Jean-Charles Faugère was member of the program committee of the following conferences:

- 39-th Symposium on Symbolic and Algebraic Computation (ISSAC 2014) (Kobe, Japan, July 23-25, 2014)
- The IACR International Conference on Practice and Theory of Public-Key Cryptography (PKC'2015)
- The thirteenth conference MEGA (University of Trento, Italy)

Elias Tsigaridas was member of the program committee of the following conferences:

- ACM Symbolic-Numeric Computation Conference (SNC 2014) (Shanghai, China, July 28-31, 2014)

Dongming Wang was member of the program committees of the following conferences

- 6th International Symposium on Symbolic Computation in Software Science (SCSS 2014) (Gammarrth, Tunisia, December 7-11, 2014),
- 16th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2014) (Timisoara, Romania, September 22-25, 2014),
- 12th International Conference on Artificial Intelligence and Symbolic Computation (AISC 2014) (Sevilla, Spain, December 11-13, 2014),
- 10th International Workshop on Automated Deduction in Geometry (ADG 2014) (Coimbra, Portugal, July 9-11, 2014).

8.2.3. Journal

8.2.3.1. member of the editorial board

Ludovic Perret is member of the editorial board of Designs, Codes and Cryptography published by Springer.

Mohab Safey El Din is member of the editorial board of Journal of Symbolic Computation (published by Academic Press/Elsevier, London).

Dongming Wang has the following editorial activities:

- Editor-in-Chief and Managing Editor for the journal Mathematics in Computer Science (published by Birkhäuser/Springer, Basel).
- Executive Associate Editor-in-Chief for the journal SCIENCE CHINA Information Sciences (published by Science China Press, Beijing and Springer, Berlin).
- Member of the Editorial Boards for the
 - Journal of Symbolic Computation (published by Academic Press/Elsevier, London),
 - Frontiers of Computer Science (published by Higher Education Press, Beijing and Springer, Berlin),
 - Texts and Monographs in Symbolic Computation (published by Springer, Wien New York),
 - Book Series on Mathematics Mechanization (published by Science Press, Beijing),
 - Book Series on Fundamentals of Information Science and Technology (published by Science Press, Beijing).
- Member of the International Advisory Board for the Communications of JSSAC (Japan Society for Symbolic and Algebraic Computation) (published by JSSAC).
- Editor for the Book Series in Computational Science (published by Tsinghua University Press, Beijing).

8.2.4. Invited Talks

Jean-Charles Faugère was invited talk at:

- Workshop on Polynomials over Finite Fields - Barcelona - Centre de Recerca Matemàtica (CRM) - Spain
- Computational Nonlinear Algebra - Computational Nonlinear Algebra (ICERM) - Providence - USA
- Main lecture - Journées Nationales de Calcul Formel

Guénaél Renault was invited speaker for the following international conferences:

- Espaces de modules effectifs et application à la cryptographie (June 10-13, 2014, Rennes, France)
- 18th Workshop On Elliptic Curve Cryptography (October 8-10, 2014, Chennai, India)

Mohab Safey El Din was invited talk at:

- Workshop *Solving Polynomial Equations* as part of the *Algorithms and Complexity in Algebraic Geometry* program, Simons Institute, Berkeley, Oct. 2014.
- Special track on *Algebraic techniques in polynomial optimization*, IFORS, Barcelona, Spain, July, 2014.
- *Real Algebraic Geometry With A View Toward Systems Control and Free Positivity*, Oberwolfach, Germany, April, 2014.

8.3. Teaching - Supervision - Juries

8.3.1. Teaching

Jérémy Berthomieu had the following teaching activities:

Master : Modélisation et résolutions numérique et symbolique de problèmes *via* les logiciels MAPLE et MATLAB, 54 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Algèbre linéaire et applications, 35 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Introduction à la Sécurité, 32 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction au Calcul Scientifique, 40 heures équivalent TD, niveau L2, Université Pierre-et-Marie-Curie, France

Jean-Charles Faugère had the following teaching activities:

Master : Résolution de systèmes polynomiaux, 12 heures équivalent TD, niveau M2, MPRI

Ludovic Perret had the following teaching activities:

Master : Résolution de systèmes polynomiaux, 12 heures équivalent TD, niveau M2, MPRI

Master : Responsable Introduction à la sécurité, 96 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Responsable Complexité, 48 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction à l'Algorithmique, niveau L2, Université Pierre-et-Marie-Curie, France

Licence : Responsable en L2 du parcours informatique-mathématiques appliquées (PIMA), niveau L2, Université Pierre-et-Marie-Curie, France

Guénaël Renault had the following teaching activities:

Master : Co-responsable de la spécialité SFPN du master d'informatique, Université Pierre-et-Marie-Curie, France

Master : Responsable Cryptologie Avancée et Appliquée, 50 heures équivalent TD, niveau M2, Université Pierre-et-Marie-Curie, France

Master : Responsable Sécurité et Canaux Auxiliaires, 12 heures équivalent TD, niveau M2, Université Pierre-et-Marie-Curie, France

Master : Responsable Modélisation des attaques et des menaces, 25 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Master : Responsable Algèbre linéaire et applications, 25 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Responsable Introduction à la cryptologie, 40 heures équivalent TD, niveau L3, Université Pierre-et-Marie-Curie, France

Mohab Safey El Din had the following teaching activities:

Master : Résolution de systèmes polynomiaux, 30 heures équivalent TD, niveau M2, Université Pierre-et-Marie-Curie, France

Master : Modélisation et résolutions numérique et symbolique de problèmes *via* les logiciels MAPLE et MATLAB, 21 heures équivalent TD, niveau M1, Université Pierre-et-Marie-Curie, France

Licence : Introduction à la Cryptologie, 20 heures équivalent TD, niveau L3, Université Pierre-et-Marie-Curie, France

8.3.2. Supervision

PhD : Jules Svartz, Résolution de Systèmes polynomiaux structurés de Dimension zéro, Université Pierre-et-Marie-Curie (Univ. Paris 6), 30 Oct. 2014, Jean-Charles Faugère

PhD in progress : Ivan Bannwarth, Fast algorithms for studying real algebraic sets, Sept. 2014, Mohab Safey El Din

PhD in progress : Simone Naldi, Exact algorithms for rank defects in linear matrices, Sept. 2012, Didier Henrion and Mohab Safey El Din

PhD in progress : Frédéric Urvoy de Portzamparc, Algebraic Cryptanalysis and Physical Attacks in Code-Based Cryptography, Fev. 2012, Jean-Charles Faugère and Ludovic Perret

PhD in progress : Thibaut Verron, Gröbner bases and structured polynomial systems, Sept. 2012, Jean-Charles Faugère and Mohab Safey El Din

PhD in progress : Rina Zeitoun, Coppersmith's Algorithm and Applications in Cryptology, Jan. 2011, Jean-Charles Faugère and Guénaël Renault

8.3.3. Juries

Jen-Charles Faugère

member of the HDR committee of Guillaume Chèze

member of the HDR committee of Frederic Chyzac

member of the HDR committee of Clement Pernet

member of the PhD committee of Ruixian Renaud as the president of the committee.

member of the PhD committee of Jules Svartz as a an examiner.

Mohab Safey El Din was:

member of the PhD committee of Marta Abril Bucerro as a reviewer;

member of the PhD committee of Pierre Lairez as a reviewer;

member of the PhD committee of Jules Svartz as a an examiner.

member of the PhD committee of Sébastien Tavenas as a reviewer;

8.4. Popularization

Guénaël Renault was invited speaker for the workshop *Fabriquer le Hazard du forum Science, Recherche et Société* (May 22, 2014) organized by the newspapers Le Monde et La Recherche.

POMDAPI Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organization

M. Kern, with H. Ben Ameer (ENIT-Lamsin, Tunis), I. Ben Gharbia (IFPEN) and V. Martin (Université de Technologie de Compiègne) organized the Conference *Modeling and simulation in porous media*, 8-9 Dec 2014, Rocquencourt. The conference was held in honor of Jean Roberts and Jérôme Jaffré, and gathered 14 internationally recognized scientists. It was attended by about 60 participants. Talks can be found on the event web page <http://mspm-jrjj2014.sciencesconf.org/>.

M. Kern is Deputy Director of **Maison de la Simulation**, a joint project between CEA, CNRA, Inria, Université de Paris 11 and Université de Versailles-St-Quentin-en-Yvelines, focused on applications of high-end computing.

M. Kern is a member of the Scientific Committee of **Orap** (ORganisation Associative du Parallélisme).

M. Kern is a member of the Scientific Board of **GDR Calcul**.

M. Kern is a member of the jury and executive board of **Label C3I**.

J. E. Roberts is a member of the External Advisory Board for **CFSES** (Center for Frontiers of Subsurface Energy Security), University of Texas at Austin and SANDIA National Laboratories, Albuquerque, New Mexico.

J. E. Roberts is a member of the prize committee for the Interpore society.

J. E. Roberts is a member of the selection committee for recruiting professors in the department of maths of the University of Bergen, and a member of the national Norwegian committee for the promotion of professors.

M. Vohralík started to co-organize, from September 2013, together with Irène Vignon-Clementel from the project-team **REO**, the monthly *Modeling and Scientific Calculation Seminar* of the Inria Paris-Rocquencourt research center, see the web page https://www.inria.fr/modelisation_et_calcul_scientifique/en/.

8.1.1.1. member of the editorial board

M. Vohralík is a member (from December 2013) of the editorial board of *SIAM Journal on Numerical Analysis*, see <http://www.siam.org/journals/sinum/board.php>.

8.1.1.2. reviewer

M. Kern was reviewer for the journals *Transport in Porous Media*, *Computational Geosciences* and *Mathematics and Computers in Simulation*.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Training: F. Clément, *Mise en œuvre de techniques numériques d'inversion de paramètres distribués*, 12 h, M2, LEME, Université de Paris 10, France.

Master: J. Ch. Gilbert, *Optimisation différentiable — Théorie et algorithmes*, 42 h, M1, **Ensta ParisTech**, France.

Master: C. Josz, *Optimisation différentiable — Théorie et algorithmes*, 30 h, M1, **Ensta ParisTech**, France.

Master: C. Josz, *Analyse convexe et optimisation non différentiable*, 6 h, M2, **Ensta ParisTech**, France.

Licence: C. Jozs, *Analyse hilbertienne*, 24 h, L3, Université de Paris 1, France.

Master: M. Kern, *Éléments finis*, 30 h, M1, Mines ParisTech, France.

Master: M. Kern, *Problèmes inverses*, 26 h, M1, Mines ParisTech, France.

Master: M. Kern, *Écoulements dans la géosphère*, 18 h, M2, Master Modélisation et Simulation, Fondation de coopération scientifique du campus du plateau de Saclay.

Master: M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, M2, Laboratoire Jacques-Louis Lions (Université de Paris 6), France.

Master: M. Vohralík, *A posteriori error estimates for efficiency and error control in numerical simulations*, 36 hours/year, M2, Department of Numerical Mathematics, Charles University in Prague, Czech Republic.

8.2.2. Supervision

PhD: Viatcheslav Vostrikov, *Numerical simulation of two-phase multicomponent flow with reactive transport in porous media*, Université de Pau et des Pays de l'Adour, defended on December 15th, 2014, B. Amaziane and M. Kern.

PhD in progress: Sarah Ali Hassan, *A posteriori error estimates and stopping criteria for domain decomposition solvers with local time stepping*, November 2013, M. Vohralík.

PhD in progress: N. Birgle, *Écoulements souterrains, méthodes numériques, et calcul haute performance*, October 2012, J. Jaffré.

PhD in progress: F. Cheikh, *Identification de failles dans un milieu poreux par une méthode d'indicateurs*, December 2011, J. E. Roberts and H. Ben Ameer.

PhD in progress: C. Jozs, *Optimisation globale des flux d'énergie dans un réseau de transport d'électricité*, May 2013, J. Ch. Gilbert.

PhD in progress: M. H. Riahi, *Identification de paramètres hydrogéologiques dans un milieu poreux*, December 2011, J. Jaffré and H. Ben Ameer.

8.2.3. Juries

M. Kern was part of the PhD thesis committee of *Feng Xing*, Université de Lille (December 2014).

M. Vohralík has been in the PhD thesis committee of *Karel Tůma*, Charles University in Prague, Czech Republic (April 4th, 2014).

8.3. Popularization

J. Ch. Gilbert has written the following page on Wikipedia.fr in 2014: [Optimisation quadratique](#).

M. Kern participated in a meeting with high school students during the "Fête de la Science" (CNAM, Paris, October 3rd, 2014), and gave presentations on the theme "Mathematics and Simulation for Underground Water" to middle school and high school students.

PROSECCO Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events organisation

8.1.1.1. General chair, scientific chair

- PROSECCO organized and hosted the **The Joint EasyCrypt-F*-CryptoVerif School 2014** from Nov 24-28. The main organizers were Catalin Hritcu, Karthikeyan Bhargavan, and Pierre-Yves Strub. The school attracted over 75 participants and was primarily funded by the ERC Starting Grant CRYSP, with supporting funds from CryptoForma, MSR-Inria, and CryptoSense. The school's website is at https://wiki.inria.fr/prosecco/The_Joint_EasyCrypt-F*-CryptoVerif_School_2014
- PROSECCO hosted the **IETF TLS Working Group Interim Meeting** from October 21-22. The main organizers were Alfredo Pironti and Karthikeyan Bhargavan. The meeting involved a dozen members of industry and academia and discussed the detailed design of the next version of TLS. The meeting's website is at https://wiki.inria.fr/prosecco/IETF_TLS_Interim_October_2014

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committee

- ASA workshop – July 2014, Vienna, Austria: Graham Steem

8.1.2.2. Member of the conference program committee

- ETAPS HotSpot – April 2014, Grenoble, France: Bruno Blanchet
- IEEE CSF – July 2014, Vienna, Austria: Bruno Blanchet
- ACM CCS – November 2014, Scottsdale AZ, USA: Graham Steel
- ETAPS POST – April 2014, Grenoble, France: Graham Steel
- PPDP – September 2014, Canterbury, UK: Chantal Keller
- ACNS – June 2014, Lausanne, Switzerland: Catalin Hritcu
- FCS-FCC 2014 – July 2014, Vienna, Austria: Catalin Hritcu, Benjamin Smyth
- IEEE CloudCom – December 2014, Singapore: Benjamin Smyth

8.1.2.3. Reviewer

- Members of Prosecco reviewed papers for many major conferences and workshops including ACM CCS, ACM POPL, IEEE S&P, etc.

8.1.3. Journal

8.1.3.1. Member of the editorial board

Associate Editor

- of the *International Journal of Applied Cryptography (IJACT)* – Inderscience Publishers:
Bruno Blanchet

8.1.3.2. Reviewer

- Members of Prosecco reviewed papers for many major journals including ACM TOPLAS, ACM TISSEC, Journal of Computer Security, etc.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: Bruno Blanchet, Cryptographic protocols: formal and computational proofs, 18h equivalent TD, master M2 MPRI, universit  Paris VII, France

Doctorat: Bruno Blanchet, course on CryptoVerif, joint EasyCrypt-F*-CryptoVerif school, Paris, France

Master: Karthikeyan Bhargavan, Cryptographic protocols: formal and computational proofs, 18h equivalent TD, master M2 MPRI, universit  Paris VII, France

License: Karthikeyan Bhargavan, INF431, INF421, INF672, INF321, introductory courses at at Ecole Polytechnique, Palaiseau, France

Doctorat: Catalin Hritcu, course on F*, joint EasyCrypt-F*-CryptoVerif school, Paris, France

Doctorat: Graham Steel, 3 teaching hours in Venice Ca' Foscari on Security APIs

Doctorat: Benjamin Smyth, Electronic Voting: Introduction, privacy and verifiability definitions, and examples @ CryptoBG'14, Bulgaria

8.2.2. Supervision

- PhD: Miriam Paiola
Verification of cryptographic protocols with lists of unbounded length, defended on May 28, 2014, supervised by Bruno Blanchet
- PhD in progress: Evmorfia-Iro Bartzia
Machine-checked program verification for concrete cryptography, started October 2011, supervised by Karthikeyan Bhargavan and Pierre-Yves Strub
- PhD in progress: Antoine Delignat-Lavaud
Verified security for web applications, started September 2012, supervised by Karthikeyan Bhargavan
- PhD in progress: Jean Karim Zinzindohoue
Analyzing cryptographic protocols and their implementations, started September 2014, supervised by Karthikeyan Bhargavan

8.2.3. Juries

- Cyrille Wiedling – Ph.D. – Nov. 21, 2014 – Universit  de Lorraine
Formal Verification of Advanced Families of Security Protocols: E-Voting and APIs
Bruno Blanchet (reviewer)
- Guillaume Scerri – Ph.D. – Jan. 29, 2015 – ENS Cachan
Proofs of security protocols revisited
Bruno Blanchet (reviewer)
- Bart van Delft – Licentiate – Mar. 14, 2014 – Chalmers University
Karthikeyan Bhargavan (discussion leader)

8.3. Popularization

8.3.1. Seminars

- Graham Steel: invited talks at FCS-FCC 2014 (Vienna)
- Graham Steel: invited keynote at Grande Region security day (Saarbrucken).
- Bruno Blanchet: invited talk at the Dagstuhl seminar “The synergy between programming languages and cryptography”.
- Karthikeyan Bhargavan: invited talk at the IETF TLS Working Group to discuss the Triple Handshake Attack (London)
- Karthikeyan Bhargavan: invited talk at the Dagstuhl seminar “The synergy between programming languages and cryptography”.

- Karthikeyan Bhargavan: invited talk at Les Journées Scientifiques Inria in Lille
- Karthikeyan Bhargavan: invited panelist at Security Standardization Research workshop in Surrey UK
- Karthikeyan Bhargavan: invited keynote at Santa's Crypto Workshop 2014 (Prague)
- Antoine Delignat-Lavaud: briefing at BlackHat USA on "The BEAST Wins Again: Why TLS Keeps Failing to Protect HTTP"
- Catalin Hritcu: invited keynote at Grande Region security day (Saarbrücken).
- Catalin Hritcu: seminar at Groupe de travail LTP du GDR GPL
- Catalin Hritcu: seminar at Groupe de travail Théorie des types et réalisabilité

8.3.2. Vulnerability Reports

- Karthikeyan Bhargavan, Antoine Delignat-Lavaud, and Alfredo Pironti reported the so-called Triple Handshake attacks on TLS implementations leading to security updates to all major web browsers: Google Chrome (CVE-2013-6628), Mozilla Firefox (CVE-2014-1491), Internet Explorer (CVE-2014-1771), Apple Safari (CVE-2014-1295), as well as to non-browser TLS libraries such as Oracle JSSE (CVE-2014-6457) and RSA BSAFE (CVE-2014-4630). For more details, see <http://secure-resumption.com>
- Antoine Delignat-Lavaud reported virtual host confusion attacks on a number of web servers, leading to security updates to the Akamai content delivery network, Dropbox, Bugzilla, as well as the NGINX web server. His results were presented at BlackHat USA and are summarized at <http://bh.ht.vc>
- Karthikeyan Bhargavan reported state machine attacks on major TLS libraries, such as OpenSSL (CVE-2014-3572), NSS, JSSE, CyaSSL, and SecureTransport, leading to security updates in all these libraries.

QUANTIC Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific events selection

7.1.1.1. member of the conference program committee

M. Mirrahimi was a member of the international conference program committee for the PRACQSYS (The Principles and Applications of Control in Quantum Systems) 2014, held at Isaac Newton Institute, Cambridge University, UK.

7.1.2. Journal

7.1.2.1. member of the editorial board

M. Mirrahimi is an associate editor of System and Control Letters.

7.1.2.2. reviewer

A. Sarlette has been a reviewer for several automatic control and dynamical systems journals or conferences.

M. Mirrahimi has been a reviewer for several automatic control and physics journals or conferences.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

M. Mirrahimi and P. Rouchon gave an introductory 3-hours mini-course on quantum systems at MTNS (Mathematical Theory of Networks and Systems) 2014, Groningen.

M. Mirrahimi gave a 8-hours mini-course on the "Stability and stabilization of partial differential equations" at the Institute for Research in Fundamental Sciences, Tehran, Iran.

7.2.2. Supervision

A. Sarlette is co-supervising 3 PhD students with his former institution UGent. One of them is working on (quantum) network algorithms accelerations and intends to address other quantum control questions in parallel, possibly joining Inria next year.

PhD in progress: Joachim Cohen, "Towards fault-tolerant quantum computation adapted to circuit QED experiments", Sept 2013-August 2016, Advisor: Mazyar Mirrahimi.

Visiting PhD student: Ananda Roy, "Towards a robust source of Schrödinger cat states", Feb 2014-July 2014, Advisor: Mazyar Mirrahimi.

7.3. Popularization

The high profile publications in Nature and Science are popularizing the new field of quantum engineering.

A. Sarlette has been giving talks on "reservoir engineering" to the (non-quantum) control community during several seminars.

M. Mirrahimi was an invited plenary speaker at CANUM (Congrès National d'Analyse Numérique) 2014, where he gave a public presentation on quantum feedback and quantum reservoir engineering.

RAP Project-Team

7. Dissemination

7.1. Leadership within scientific community

Nicolas Broutin is member of the steering committee of the international meeting on analysis of algorithms (AofA). He has been the referee for the PhD thesis of Elie de Panafieu (Paris 7) and a member of the committee for the PhD thesis of Ross Hemsley (U de Nice).

Christine Fricker is member of the jury of agrégation. She is the leader of PGMO project “Systèmes de véhicules en libre-service: Modélisation, Analyse et Optimisation” with G-Scop (CNRS lab, Grenoble) and Ifsttar. From 1 to 3 years. Starting at 1/10/2013. *Christine Fricker* was member of Jury de recrutement de CR2 Inria-Saclay.

Philippe Robert is Associate Editor of the Book Series “Mathématiques et Applications” edited by Springer Verlag and Associate Editor of the journal “Queueing Systems, Theory and Applications”. He is member of the scientific council of EURANDOM. He is also associate Professor at the École Polytechnique in the department of applied mathematics where he is in charge of lectures on mathematical modeling of networks. *Philippe Robert* has been a member of the technical programme committee of the conferences ACM Sigmetrics(2014) Performance(2014) and ICCCN (2014).

7.2. Teaching

Nicolas Broutin has taught at the Master Parisien de Recherche en Informatique (MPRI), in the course 2.15 on Analysis of Algorithms. He has also taught at NYU Shanghai during the fall of 2014.

Philippe Robert gives Master2 lectures in the laboratory of the Probability of the University of Paris VI. He is also giving lectures in the “Programme d’approfondissement de Mathématiques Appliquées et d’Informatique” on Networks and Algorithms at the École Polytechnique.

7.3. Conference and workshop committees, invited conferences

Nicolas Broutin has given lectures at the annual meeting of the GDR-IM and at the Journées de combinatoire de Bordeaux, the Workshop on New Frontiers in random geometric graphs at the Lorentz Center in Leiden. He has presented his results at seminars in Ecole Polytechnique (LIX and CMAP), Université de Nice and at the East China Normal University in Shanghai. He has visited the mathematics department of the University of Bath and the NYU-ECNU institute for mathematical sciences at NYU Shanghai.

Sarah Eugene gave a talk at the Joint Annual Meeting of the Japanese Society for Mathematical Biology and the Society for Mathematical Biology on July 2014, Osaka, Japan.

Christine Fricker was invited at Tours University in a panel about “Trades of mathematics”, 20/11/2014. She gave a talk at ECQT (1st European Conference on Queuing Theory), Ghent, 20-22/8/2014. Participation (co-author) at Workshop CluCo d’EGC 2014, Rennes, 28/01/2014, IWCIM, Paris, 1-2/11/2014.

Philippe Robert gave a keynote conference of “European Conference on Queueing Theory”, ECQT 2014, Ghent, August 2014. He gave a talk at the Lycee “Jeanne d’Albret” in Saint Germain en Laye in May, and for BTS students in April and also to maths teachers of option ISN (Informatique et sciences du numérique), académie de Versailles in April 2014.

REGAL Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific event organisation

8.1.1.1. General chair, scientific chair

- Pierre Sens was the general co-chair for SBAC-PAD 2014, 26th International Symposium on Computer Architecture and High Performance Computing.
- Marc Shapiro was Program Co-Chair of the **OPODIS 2014** conference.

8.1.1.2. Member of the organizing committee

Sébastien Monnet was the workshop chair for SBAC-PAD 2014, 26th International Symposium on Computer Architecture and High Performance Computing. Luciana Arantes was local organizer of SBAC-PAD 2014

8.1.2. Scientific events selection

8.1.2.1. Chair of conference program committee

- Luciana Arantes was PC chair of the XV Workshop on Test and Fault Tolerance, 2014, Brazil.
- Marc Shapiro was Program Co-Chair of the **OPODIS 2014** conference.

8.1.2.2. Member of the conference program committee

- Swan Dubois was member of the programm committee of the 16èmes Rencontres Francophones pour les Aspects Algorithmiques des Télécommunications (AlgoTel'14).
- Sébastien Monnet was member of the programm committee of the 1st International Symposium on Cloud Computing (CCA 2014).
- Franck Petit was member of the program committee of the Conférence d'informatique en Parallélisme, Architecture et Système (ComPas) 2014.
- Pierre Sens was member of the program committee of 3rd IEEE/SAE International Conference on Connected Vehicles and Expo (ICCVE 2014), 3rd IEEE Symposium on Network Cloud Computing and Applications (NCCA'2014), 28th IEEE International Parallel and Distributed Processing Symposium (IPDPS'2014).
- Luciana Arantes was member of the program committee The 13th IEEE International Symposium on Network Computing and Applications (NCA 2014).
- Marc Shapiro was member of the PC of the Annual ACM/IFIP/USENIX Middleware Conference (Middleware 2014), and of the Workshop on Adaptive Resource Management and Scheduling for Cloud Computing (AMRS-CC) 2014.

8.1.2.3. Reviewer

Swan Dubois peer-reviewed papers for STACS'14, ICDCS'14, SRDS'14, SSS'14, and WWW'14.

Franck Petit peer-reviewed papers for ICDCN'15, IPDPS'15 and SSS'14.

Marc Shapiro was a reviewer for the European Research Council Consolidator Grant (panel PE6) 2014.

8.1.3. Journal

8.1.3.1. Member of the editorial board

Franck Petit is a member of the editorial board of Journal of Discrete Mathematics and The Scientific World Journal. Pierre Sens is associated editor of International Journal of High Performance Computing and Networking (IJHPCN).

8.1.3.2. Reviewer

Swan Dubois peer-reviewed papers for Information Processing Letters (IPL) and Scientific World Journal (SWJ). Sébastien Monnet peer-reviewed papers for TCS, JPDC and Transaction on Computers journal. Franck Petit peer-reviewed papers for TCS, Distributed Computing, International Journal of Foundations of Computer Science. Luciana Arantes reviewed papers for JPDC and FGCS.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: Luciana Arantes, Swan Dubois, Oliver Marin, Sébastien Monnet, Franck Petit, Pierre Sens, Advanced distributed algorithms, M2, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Sébastien Monnet, Pierre Sens, Julien Sopena, Operating systems kernel, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Olivier Marin, System distributed Programming, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Olivier Marin, Franck Petit, Distributed Algorithms, M1, UPMC Sorbonne Universités, France

Licence: Pierre Sens, Luciana Arantes, Julien Sopena, Principles of operating systems, L3, UPMC Sorbonne Universités, France

Licence: Swan Dubois, Sébastien Monnet, Introduction to operating systems, L2, UPMC Sorbonne Universités, France

Licence : Swan Dubois, Data structures in C, 80h, L2, UPMC Sorbonne Universités, France *

Licence : Swan Dubois, Data structures in C, L2, UPMC Sorbonne Universités, France

Ingénieur 4ème année : Marc Shapiro, Introduction aux systèmes d'exploitation, 22 h, M1, Polytech UPMC Sorbonne Universités, France.

8.2.2. Supervision

Completed PhD: Pierpaolo Cincilla: "Gargamel: boosting DBMS performance by parallelising write transactions," UPMC, 09/15/2014. Advisors: Marc Shapiro, Sébastien Monnet.

PhD: Jonathan Lejeune, "Algorithmique distribuée d'exclusion mutuelle : vers une gestion efficace des ressources," UPMC, 09/19/2014, Julien Sopena, Luciana Arantes, Pierre Sens.

Completed PhD: Masoud Saeida Ardekani, "Ensuring Consistency in Partially Replicated Data Stores," UPMC, 09/16/2014. Advisors: Marc Shapiro, Pierre Sutra.

PhD: Yoann Péron, "Development of an adaptive recommendation system", UPMC/Makazi, Franck Petit, Patrick Gallinari, Matthias Oehler (Makazi).

PhD: Mohamed Hamza Kaaouachi, "Autonomic Distributed Environments for Mobility", UPMC/Chart-LUTIN (Labex SMART), Franck Petit, Swan Dubois, and François Jouen (Chart).

PhD in progress: Tao Thanh Vinh, UPMC, CIFRE, since Feb. 2014. Advisors: Marc Shapiro, Vianney Rancurel (Scality).

PhD in progress: Alejandro Z. Tomsic, UPMC, funded by SyncFree, since Feb. 2014. Advisor: Marc Shapiro.

PhD in progress: Mahsa Najafzadeh, UPMC, funded by Inria competitive grant (Cordi-S), since Nov. 2012. Advisor: Marc Shapiro.

PhD in progress: Lokesh Gidra, UPMC, since Feb. 2011. Advisors: Gaël Thomas, Julien Sopena, Marc Shapiro.

PhD in progress: Marek Zawirski, UPMC, funded by Inria Google Research Grant. Since Oct. 2010. Advisor: Marc Shapiro.

8.2.3. Juries

Pierre Sens was the reviewer of:

- Jacques Jorda. HDR IRIT, Toulouse
- A. Sinah. PhD Irista (Advisor : M. Banatre)
- D. Dib. PhD Irista (Advisor : C. Morin)
- O. Shahmirzadi. PhD EPFL, Suisse (Advisor : A. Schiper)
- M. Servajean. PhD LIRMM (Advisor : E. Pacitti)
- T-T. Vu. PhD LIFL (Advisor : N. Meleb)

Franck Petit was the reviewer of:

- Greicy Marques-Costa, TIMA/ARIS, Grenoble (Advisor: R. Velazco),
- Ahmed Mouhamadou Wade, LaBRI Bordeaux (Advisor: R. Klasing)

Marc Shapiro was a member of the thesis committee of:

- Ghassan Almaless, UPMC Sorbonne Universités (advisor: Franck Weisburt).
- Jiaqing Du, École Polytechnique Fédérale de Lausanne (advisor: Willy Zwaenepoel).

8.3. Popularization

The team animated a stand on distributed algorithms at the 2014 edition of "Fête de la Science"

REO Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

- Matteo Aletti
 - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- Laurent Boudin
 - Co-organizer of the M2S2 workshop (Mathematical Models for Social Sciences), with J.-P. Nadal
- Miguel Ángel Fernández Varela
 - Organizer of the CEA-EDF-Inria summer school on Numerical methods for interface problems in fluid and solids with discontinuities, Cadarache, France (with P. Massin and J. Segré), 2014
 - Organizer of the International workshop on numerical methods and applications in fluid-structure interactions, November 24-25, 2014, Grenoble, France (co-organized with G.-H. Cottet, J-F. Gerbeau and E. Maitre)
- Jean-Frédéric Gerbeau
 - Organizer of the International workshop on numerical methods and applications in fluid-structure interactions, November 24-25, 2014, Grenoble, France (with G.-H. Cottet, M. Fernández and E. Maitre)
- Jessica Oakes
 - Assistant Organizer for the 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease
 - Student Forum Leader: International Society of Aerosol Medicine
- Sanjay Pant
 - Co-organizer of the 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, May 21st-22nd, Rocquencourt, France
- Elisa Schenone
 - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- I. Vignon-Clementel
 - Organizer of the monthly seminar at Inria Paris-Rocquencourt on “modeling and scientific computing”
 - Organizer of the 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, May 21st-22nd, Rocquencourt, France. This event was co-organized with the School of Medicine, Stanford University & REO. It was a great success! Over 70 participants came from all over the world, from the USA and France, but also from as far as Japan, Turkey or Australia. Participants particularly liked the mixture of mathematics/engineering and clinical research presented in an understandable way for both communities. This fostered lively discussions after talks and at the poster session. Three young investigators received awards from the *Fondation Sciences Mathématiques de Paris*; one of them is Stephanie Lindsey, a visiting PhD student at REO from Cornell University. <http://www.rocq.inria.fr/engfrontiersped>

- Organizer of the 5th general meeting of the Transatlantic Network of Excellence for Cardiovascular Research MOCHA, May 22nd-24th, Rocquencourt, France.

9.1.2. Journal editorial boards

- Jean-Frédéric Gerbeau
 - Editor-in-Chief of Mathematical Modelling and Numerical Analysis (M2AN).
 - Member of the editorial board of International Journal for Numerical Methods in Biomedical Engineering (IJNMBE).
 - Member of the editorial board of Communications in Applied and Industrial Mathematics.
- I. Vignon-Clementel
 - Review Editor of Frontiers in Pediatric Cardiology.

9.1.3. Conferences

- Chloé Audebert
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
 - PhD students seminar, Université Paris-Decartes, February 20th, 2014, Paris, France
 - Poster session, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Inria Paris-Rocquencourt, May 21-22, 2014, Paris, France
- Laurent Boudin
 - Invited speaker at Workshop "PDE models in social sciences", closure of Peter Markowich's chair at FSMP, Paris, France, January 2014.
 - Seminar, Numerical analysis and PDEs, LMPP, Univ. Lille 1, France, March 2014.
 - Seminar, Applied Mathematics, IMB, Univ. Bordeaux, France, March 2014.
 - Seminar, Mathematics and applications, Irmarr, ENS Rennes, France, April 2014.
 - Invited speaker at Conference "Problems on kinetic theory and PDEs", Univ. Novi Sad, Serbia, September 2014.
 - Invited speaker at Workshop "Kinetic models for complex gases", Univ. Bordeaux, France, October 2014.
- Muriel Boulakia
 - Contributed talk, Hybrid Inverse Problems, Paris, February 2014
 - Contributed talk, LJLL-Shanghai Meeting, Paris, July 2014
 - Contributed talk, GDR Metice workshop, Paris, November 2014
- Miguel Ángel Fernández Varela
 - Invited plenary lecture, 12th Franco-Romanian conference on applied mathematics, Lyon (France) August 2014.
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
 - Seminar, University of Caen, October, 2014, France
- Benoit Fabrèges
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
 - Contributed talk, International workshop on numerical methods and applications in fluid-structure interactions, November 24-25, Grenoble, France, 2014.
- Justine Fouchet-Incaux

- Contributed talk, CANUM, Carry-le-Rouet, France, April 2014.
- Poster, IXème congrès de Physiologie, de Pharmacologie et de Thérapeutique, Poitiers, April 2014.
- Jean-Frédéric Gerbeau
 - Invited plenary lecture, ESCO 2014, Pilsen (Czech Republic), June 2014
 - Invited plenary lecture, CARI 2014, Saint-Louis (Senegal), October 2014
 - Invited lecture, International Symposium Modeling and Simulation of the Cardiovascular System, Heidelberg (Germany), February 2014
 - Invited seminar, Collège de France, June 2014
 - Invited lecture, Workshop GDR Mecabio, Paris, 2014
 - Invited lecture, Workshop on Model Order Reduction and Data, Paris, 2014
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
 - Minisymposium talk, 7th World Congress of Biomechanics (WCB), July 6-11, 2014, Boston, USA.
- Céline Grandmont
 - Seminar, Nancy Univ., april 2014.
 - Invited speaker, PhD student day, sept. 2014.
- Mikel Landajuela
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
 - Seminar, UCL/Inria Workshop on embedded interfaces, London, UK, February 25-26, 2014
 - Poster, International workshop on numerical methods and applications in fluid-structure interactions, Grenoble, France, November 24–25, 2014;
- Damiano Lombardi
 - Seminar scientific computing , IMB Bordeaux, september 25
 - GDR Metice, Paris, 19-11-2014,
 - International Workshop on Fluid Structure Interaction, 24 novembre 2014, Grenoble
- Jessica Oakes
 - Invited Seminar Talk at Technion - Israel Institute of Technology, Haifa Israel July 2014.
 - Seminar Talk at University of California Berkeley, Berkeley California USA, September 2014
 - Seminar Talk at Inria@SiliconValley Workshop, Paris France July 2014.
 - Poster and Podium Talk at the International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease. May 2014, Paris France.
 - Podium Talk at Second Aerosol Dosimetry Conference, October 2014. Irvine, California, USA.
 - Podium Talk at American Physics Society, Division of Fluid Dynamics, November 2014. San Francisco, California, USA
- Stephanie Lindsey
 - Contributed talk at "American Physical Society Division of Fluid Dynamics 67th Annual Meeting", November 23-25, 2014 San Francisco, California

- Invited speaker, "4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart", May 21-22, 2014 Paris, France
- Invited speaker, Junior Seminar, Inria, January 22, 2014 Paris, France.
- Sanjay Pant
 - Contributed talk, Mathematics and Biology: 2nd Young Investigators International Workshop, Paris, France, April 3-4, 2014.
 - Poster, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, France, May 21-22, 2014.
 - Contributed talk, 5th Annual Meeting of the Leducq Foundation Network of Excellence in Modeling of Single Ventricle Hearts Inria, Paris-Rocquencourt, France, May 22-24, 2014.
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
- Elisa Schenone
 - Poster, 4th International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, Paris, May 21-22 2014
 - Seminar, Inria-Rocquencourt Junior Seminar, Paris, June 17th 2014
 - Seminar, PhD students working group of Jacques-Louis Lions Laboratory of UPMC, Paris, March 21st 2014
- Marc Thiriet
 - Invited Speaker, CASTS-LJLL Workshop on Applied Mathematics and Mathematical Sciences. National Taiwan University, May 26 - 29, 2014
 - Keynote speaker, CompIMAGE'14, Sept. 3-5, Pittsburgh, USA
 - Invited Speaker, International Conference on Progress in Fluid Dynamics and Simulation, National Taiwan University, October 25-27, 2014
 - Miraucourt O, G enevaux O, Szopos M, Thiriet M, Talbot H, Salmon S, Passat N. s. 2014 IEEE International Symposium on Biomedical Imaging, Beijing, China, April 29 - May 2, 2014
 - M Thiriet, M Solovchuk, TWH Sheu, HIFU , CompIMAGE'14, Sept. 3-5, Pittsburgh, USA
 - Solovchuk M, Sheu TWH, Thiriet M, 1st Global Conference on Biomedical Engineering (GCBME 2014) and 9th Asian Pacific Conference on Medical and Biological Engineering (APCMBE 2014), Oct. 9-12, 2014, NCKU, Tainan **Young Investigator award**
 - Solovchuk M, Sheu TWH, Thiriet M., International Conference on Progress in Fluid Dynamics and Simulation, National Taiwan University October 25–27, 2014
- Marina Vidrascu
 - Modeling and scientific computing seminar at Inria Paris-Rocquencourt on January 7th, 2014.
 - Minisymposium talk, 11th World Congress on Computational Mechanics (WCCM XI), July 20-25, 2014, Barcelona, Spain.
 - Seminar at Univ Compi egne, October 7th, 2014.
- Ir ene Vignon-Clementel
 - Invited talk, Navier-Stokes workshop “une equation lumineuse” , Ecole Polytechnique, March 12th, Palaiseau, France.
 - Invited talk, Institute of Child Health, University College London, April 3rd, London, UK.
 - Invited talk, Notocord workshop, Inria Paris-Rocquencourt, June 6th, 2014, France.

- Talk, Inria-Dassault System meeting, Oct. 29th, 2014, Paris, France .

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

DUT :

- Justine Fouchet-Incaux 1ère année: Mathématiques S1, 28h, IUT d'Orsay, département Mesures Physiques, Université Paris-Sud,
- Justine Fouchet-Incaux 2ème année: Mathématiques S4, 33h, IUT d'Orsay, département Mesures Physiques, Université Paris-Sud

Licence :

- Chloé Audebert
 - "Calculus" (72h), L1 - undergraduate, Université Paris 6 UPMC, France (1st semester 2014-2015).
 - Numerical ressources for Small Private Online Classes (SPOC), L1 - undergraduate, Université Paris 6 UPMC, France.
- Laurent Boudin
 - Multivariable calculus and multiple integrals (114 h), L2, UPMC.
 - Shared studies supervision in mathematics licence for approximately 500 students (30h), L2-L3, UPMC.
- Muriel Boulakia
 - Scilab (35h), L2, UPMC
 - Hilbertian analysis (45h), L3, Polytech'Paris,
- Miguel Ángel Fernández Varela
 - Scientific computing, 30h, L3, École des Ponts ParisTech,
- Céline Grandmont
 - Numerical Analysis, 36 h, L3, UPMC
 - EDO, 24 h, L3, UPMC
- Damiano Lombardi
 - Linear Algebra TD, 32h, L1 Physique-Chimie, UP-SUD
- Irène Vignon-Clementel
 - Mathematics for biology, 64h ETD, L1 - undergraduate, Univ. de Versailles Saint Quentin

Master :

- Laurent Boudin
 - Basics for numerical methods (72h), M1, UPMC.
 - Studies supervision in mathematics master for 15 students (20h), M1, UPMC.
- Muriel Boulakia
 - Preparatory course for teaching admission examination Agrégation (60h), M2, UPMC,
- Jean-Frédéric Gerbeau
 - Numerical methods in hemodynamics (20h), M2, UPMC / Univ Paris-Sud / Ecole Polytechnique.
- Miguel Ángel Fernández Varela

- Numerical methods in bio-fluids, 6h, M2, University of Vigo, Spain.
- Damiano Lombardi
 - Numerical Methods, 48h, Paris Polytech, M1 Robotique

Engineering schools:

- Irène Vignon-Clementel. Numerical simulations of blood flow, 1h30, as part of the undergraduate "continuum mechanics" class at AgroParisTech, France

9.2.2. Supervision

PhD: Grégory Arbia, *Multi-scale Modeling of Single Ventricle Hearts for Clinical Decision Support*, Univ Paris 6 UPMC, defended December 16, 2014. Supervisors: J-F. Gerbeau & I. Vignon-Clementel, [13].

PhD: Jimmy Mullaert, *Fluid-structure interaction*, Univ Paris 6 UPMC, defended on December 17 . Supervisors: M.A. Fernández Varela & Y. Maday, [14].

PhD: Elisa Schenone, *Inverse problems in electrocardiology*, Univ Paris 6 UPMC, defended on November 28. Supervisors: J-F. Gerbeau & M. Boulakia, [15].

PhD: Saverio Smaldone, *Numerical methods for cardiac hemodynamics*, Univ Paris 6 UPMC, defended on October 13, Supervisors: J-F. Gerbeau & M.A. Fernández Varela, [16].

PhD in progress: Chloé Audebert, *Modeling of liver hemodynamics*, since October 2013. Supervisors: J-F. Gerbeau & I. Vignon-Clementel.

PhD in progress: Justine Fouchet-Incaux, *Mathematical and numerical modeling of the human breathing*, since October 2011. Supervisors: C. Grandmont & B. Maury.

PhD in progress: Mikel Landajuela, *Coupling schemes and unfitted mesh methods for fluid-structure interaction*, since October 2012, Supervisor: M.A. Fernández Varela.

PhD in progress: Matteo Aletti, *Multiscale retinal vascular modeling* , since January 2014 Supervisors: J-F. Gerbeau & Damiano Lombardi.

PhD in progress: Elliott Tixier, *Stem cells electrophysiology*, since September 2014 2014. Supervisors: J-F. Gerbeau & Damiano Lombardi.

PhD in progress: Nicolas Pozin *Multiscale lung ventilation modeling in health and disease*, since March 2014. Supervisors: C. Grandmont & I. Vignon-Clementel.

PhD in progress: Stéphane Liwarek, *Air flow in the nasal cavity*, October 2010-September 2014. Supervisors: M.A. Fernández Varela & J-F. Gerbeau.

9.2.3. Juries and hiring committees

- Laurent Boudin
 - Member of the PhD committees of Galina Vinogradova (SciencesPo, december 2014)
- Muriel Boulakia
 - Hiring committee: UPMC and Univ. Paris-Diderot
- Jean-Frédéric Gerbeau
 - PhD committees: Guilhem Lepoutier, Univ. Orsay (referee), Liesbeth Taelman, Univ. Gand, Belgique (referee), Adela Puscas, Univ. Paris-Est (referee), Christophe Chnafa, Univ. Montpellier 2 (referee), Agnès Leroy, Univ. Paris-Est. (member)
 - Hiring committee: Univ Orsay, CR2 Inria Paris-Rocquencourt, CR1 Inria.
- Céline Grandmont
 - Hiring committee: Lyon Univ. (Assitant Professor position).
 - Head habilitation (HDR) committee: B. Mauroy, Nice univ.
- Marina Vidrascu

- Member of the Hiring committee Perpignan (professor)
- Member of the PhD committee of Claire Dupont and Jimmy Mullaert
- Irène Vignon-Clementel
 - Member of the PhD committee of Xiaofei Wang, UPMC, Oct. 17th
 - PhD referee of Alessia Baretta, LaBS, Politecnico di Milano, Italy, Oct 21st.
 - Member of the PhD committee of Grégory Arbia, UPMC, Dec 16th.

9.3. Service activities

- Laurent Boudin
 - Member of the Board of Mathematics Licence (EFU de Licence de mathématiques), UPMC.
 - Member of the think-tank for third-year programs in Mathematics at UPMC.
 - Member of the IREM (Institutes for Research on Mathematics Teaching) Scientific Committee.
- Muriel Boulakia
 - Supervisor of the teaching of mathematics at the engineer school Polytech Paris-UPMC
- Jean-Frédéric Gerbeau
 - Service activity at Inria: Délégué Scientifique / Chairman of the project-teams' committee of Inria Paris-Rocquencourt research center; Member of the Inria Evaluation Committee; Member of the Inria International Chairs committee.
 - Service activity in other French institutions: member of the research committee of Sorbonne Universités; member of the scientific committee of the Faculty of Science, University Versailles Saint-Quentin; member of the scientific committee of Labex NUMEV, Montpellier.
 - Service activity abroad: member of the Reference Committee of the PhD program Mathematical Models and Methods in Engineering (Politecnico di Milano, Italy);
- Céline Grandmont
 - Member of the CNU 26 (2011–2015). Member of the CNU extended board.
- Marc Thiriet
 - President of thematic committee CT3 (Biomedical Simulation and Applications to Health) of GENCI (Grand Equipement National de Calcul Intensif – National Large Equipment for Intensive Computation).
 - Member of Evaluation Groups of the Canadian Granting Agency NSERC 1501 (Genes, Cells and Molecules), 1502 (Biological Systems and Functions), 1504 (Chemistry), 1507 (Computer Science), 1508 (Mathematics and Statistics), 1511 (Materials and Chemical Eng.), and mainly 1512 (Mechanical Eng., both Solids and Fluids sections).
 - Member of Scientific Council of DiscInNet
- Marina Vidrascu
 - Member of the post-docs selection committee, Inria Paris-Rocquencourt
- Irène Vignon-Clementel
 - Member of the PhD grant committee, Inria Paris-Rocquencourt
 - Mediator between PhD students and their supervisors for Inria Paris-Rocquencourt

9.4. Popularization

- Matteo Aletti

- presentation at "Incontro Neo-Laureati" (Conférence jeunes diplômés) at Politecnico di Milano
- presentation about REVAMMAD project at ArtVerona
- Céline Grandmont
 - Popularization paper "Inspiration mathématique: la modélisation du poumon", in *Mathématique l'explosion continue*, edited by SFdS, SMAI, SMF.
 - Conference «Nuit des Sciences, ébullition», ENS Paris, June 2014
 - Conference «Mathematic Park a Bobigny», 300 students (high school level), Oct. 2014
 - Conference «Filles et Maths: une equation lumineuse», 60 students, (high school level), Oct. 2014.
- Irene Vignon-Clementel
 - Conference in High School Blanche de Castille, March 25th, Le Chesnay

RITS Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

Fawzi Nashashibi: co-organiser of the session "Advanced Perception, Localization and Control for Ground Robots" of the International Conference on Control, Automation, Robotics and Vision (ICARCV 2014);

Joshué Pérez Rastelli: co-Chair of the Poster Session IIIB1, Vehicle Environment Perception III of the IEEE Intelligent Vehicles Symposium 2014.

Oyunchimeg Shagdar: co-chair of the International Workshop on vehicular networking and intelligent transportation systems, 2015.

9.1.1.2. Member of the organizing committee

Vicente Milanés: publicity co-chair of the International Conference on Internet of Vehicles 2014.

Michel Parent : organization of a session on "International Connected Vehicle & ITS" at IoT China 2014 Conference (Oct. 28-30, 2014, Shanghai, China)

9.1.1.3. Invited speaker

Guy Fayolle: invited speaker at Heriot-Watt University (Edinburgh), where he presented various aspects of the article [20].

Fawzi Nashashibi: invited speaker at ETSI ITS meeting in at Berlin (February), Franco-British Workshop; keynote speaker at the IROS'14 PPNIV workshop (Chicago, September) and participant of the roundtable "Towards driverless vehicles?"; participant of the euRobotics-aisbl meeting (Frankfurt); invited speaker at the AHB030 committee of the TRB'14 conference (Washington, January), at Princeton University on "Automated Urban Vehicles" (January 10, 2014, Princeton, USA)

Michel Parent: invited speaker at VDI - Automated Driving 2014 (<http://www.vdi-wissensforum.de/en/events/822/event/01KO905/>), and at iMobility Challenge Conference (<http://www.imobilitychallenge.eu/roadshow/view/id/15>)

Oyunchimeg Shagdar: invited speaker at 6th ETSI ITS Workshop 2014, Berlin, March 2014; Seminar "Industrial connected objects, M2M, and Networking" Paris June 2014.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

Guy Fayolle: program committee member of the regular Int. Symposium on Computer and Information Sciences (Krakow, Poland, oct. 27-28 2014).

Vicente Milanés: member of the IPC in the International Conference on Internet of Vehicles 2014.

Fawzi Nashashibi: technical program committee member of the IEEE Intelligent Vehicles Symposium 2014, of the 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014), 2014 IEEE International Conference on Robotics and Automation (ICRA'14), 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS'14).

Joshué Pérez Rastelli: technical program committee member of the IEEE Intelligent Vehicles Symposium 2014.

Oyunchimeg Shagdar: technical program committee member of the IARIA international conference on Emerging network Intelligence (EMERGING), 2014, and of the IEEE Vehicular Technology Conference (VTC 2014).

Anne Verroust-Blondet: technical program committee member of MMEDIA 2014.

9.1.2.2. Reviewer

Guillaume Bresson: 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014).

Fawzi Nashashibi: 2014 IEEE Intelligent Transportation Systems Conference, 2014 IEEE Intelligent Vehicles Symposium, International conference on embedded computer Systems: Architecture, MOdeling and Simulatons (SAMOS) XIV, 2014 IEEE International Conference on Robotics and Automation, 2014 IEEE/RSJ International Conference on Intelligent Robots and Systems, 2014 Transportation Research Board, 2014 Intelligent Transportation Systems World Congress.

Michel Parent: IEEE Control Systems Society Conference, IEEE Intelligent Transportation Systems Conference, IFAC World Congress, ITS World Congress, IEEE International Conference on Robotics and Automation (ICRA).

Evangeline Pollard: 13th International Conference on Control, Automation, Robotics and Vision (ICARCV 2014), IEEE Intelligent Vehicles Symposium 2014, IEEE Vehicular Technology Conference (VTC 2014), International IEEE Conference on Intelligent Transportation Systems 2014, IEEE International Conference on Intelligent Robots and Systems 2014.

Joshué Pérez Rastelli: International IEEE Conference on Intelligent Transportation Systems 2014, 2014 IEEE Intelligent Vehicles Symposium, International conference on embedded computer Systems: Architecture, MOdeling and Simulations (SAMOS) XIV.

Oyunchimeg Shagdar: IEEE Vehicular Technology conference (VTC) 2014, International IEEE Conference on Intelligent Transportations Systems (ITSC) 2014, IEEE International conference on connected vehicles and expo (ICCVE) 2014, IEEE Intelligent Vehicles Symposium (IV) 2014, IARIA conference on Emerging network Intelligence (Emerging) 2014.

9.1.3. Journal

9.1.3.1. Member of the editorial board

Guy Fayolle: associate editor of the journal *Markov Processes and Related Fields*.

Vicente Milanés: editor-in-chief of *Journal of Computer and Communications*, guest editor Special Issue of *Electronics journal on: Intelligent and Cooperative Vehicles*, associate editor of *Journal of Intelligent Systems*, associate editor of *Journal of Intelligent Transportation and Urban Planning*.

Fawzi Nashashibi: associate editor of the journal *Traitement du signal*.

Joshué Pérez Rastelli: guest-Editor of *IEEE Intelligent Transportation Systems Magazine*, special issue of ELECTRO-MOBILITY, July 2014.

Oyunchimeg Shagdar: associate editor of *Wiley International Journal of Communication Systems*.

9.1.3.2. Reviewer

Guy Fayolle: *PTRF, MPRF, QUESTA, IEEE-IT, JSP, AMS Mathematical Reviews*.

Vicente Milanés: *IEEE Trans. on Intelligent Transportation Systems*.

Fawzi Nashashibi: *Transportation Research Part C, IJRR, IJVAS, IEEE Transactions on Instrumentation and Measurement, IEEE Robotics and Automation Magazine, IEEE Transactions on ITS, IEEE TVT, IEEE Sensors*.

Michel Parent: *Journal of Intelligent Transportation Systems, Transportation Research Board Journal*.

Joshué Pérez Rastelli: *IEEE Robotics and Automation Magazine, Ad Hoc Networks, Mathematics and Computers in Simulation, Information Sciences, Dyna, Revista Bimestral de Ingeniería Multidisciplinar, Robotics, Electronics, IEEE Intelligent Transportation Systems Magazine*.

Evangeline Pollard: *IEEE Transactions on Vehicular Technology (TVT)*, *IEEE Transactions on Aerospace and Electronics Systems (AES)*.

Oyunchimeg Shagdar: *IEEE Transactions on Dependable and Secure computing*, *IEEE Transactions on Vehicular Technology*, *IEEE Transactions of Wireless Communications* and *Wiley International Journal of Communications Systems*.

Anne Verroust-Blondet: *Computer & Graphics*, *International Journal of Information and Communication Technology (IJICT)*, *Journal of Theoretical Biology*, *Information Sciences*.

9.1.4. Other

Guy Fayolle: member of the working group IFIP WG 7.3 and scientific advisor at the Robotics Laboratory of Mines ParisTech. In this respect, he participates in the contract COVADEC, which is an industrial project (FUI / FEDER 15) involving 8 partners, among which Peugeot, Valeo, Armines and All4tec. The acronym stands for *Conception et Validation des Systèmes Embarqués d'Aide à la Conduite*. Armines will propose a Markov chain analysis aiming at optimizing test generation, taking into account non independent parameters.

Fawzi Nashashibi: scientific advisor at the *Robotics Laboratory of Mines ParisTech*, member of the European working group on Automation of the iMobility Forum, member of the International Committee on Vehicle Highway Automation (AHB30), Topic Leader at the euRobotics (aisbl) robotics network.

Michel Parent: project evaluator for the European Commission and for the Belgium Ministry of Research ("Service Public de la Wallonie DGO6"), French representative for ISO TC184 SC2 (Service Robots), participate as French representative to the ISO TC204 WG14 on the standards for driving assistance and full automatic driving.

Anne Verroust-Blondet: expert for the call "H2020 REFLECTIVE-7-2014" at European Commission, member of the CES 31 committee ("Cultures, patrimoines") for the "Blanc" and "Young researcher" 2014 programmes of the French National Research Agency (ANR), scientific correspondent of the Inria European Partnerships Department for the Inria Paris-Rocquencourt research centre.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Fawzi Nashashibi, "Programmation avancée", 84h, L1, Université Paris-8 Saint-Denis, France.

Licence: Guillaume Trehard, "C programming language", L1, 50h, DUT Génie Electrique et Informatique Industrielle, IUT Chartres, France

Master: Jean-Marc Lasgouttes, "Analyse de données", 54h, second year of Magistère de Finance (M1), University Paris 1 Panthéon Sorbonne, France.

Master: Fawzi Nashashibi, "Programmation C++/OpenGL", 16h, 2nd year (MAREVA), Mines ParisTech, France.

Master: Fawzi Nashashibi, "Synthèse d'images", 12h, M2, INT Télécom SudParis, France.

Master: Fawzi Nashashibi, "Détection d'obstacles et fusion multicateurs", 4h, M2, INSA de Rouen.

Master: Joshué Pérez Rastelli, "Robotique et contrôle temps réel", M1, 15 hours, Leonard Da Vinci University -l'ESILV- (La Defense, France), Apr-May 2014.

Master: Joshué Pérez Rastelli, "Standards for Automobiles", M2, 30 hours, François Rabelais University (Tours, France), François Rabelais University (Tours, France), Feb-March 2014.

Master: Joshué Pérez Rastelli, "Digital environment and road – ITS applications", M2, 32.5 hours, Feb-March 2014.

Master: Guillaume Trehard, “C++ programming language”, M1, 30h, Paris 8 University, France.

Engineering school: Evangeline Pollard, “Le véhicule autonome”, 1.5 h, Ecole des Ponts ParisTech, Champs-sur-Marne, France, Sept. 2014.

9.2.2. Supervision

PhD : Ines Ben Jemaa, “Dissemination of Geo-localized information in cooperative ITS”, Mines ParisTech, December 17th 2014, Mines ParisTech, supervisor: Arnaud De La Fortelle, co-supervisor Paul Muhlethaler and Oyunchimeg Shagdar

PhD : Esmâ Elghoul, “Segmentation de maillages 3D par l'exemple”, Télécom ParisTech, September 29th 2014, supervisor: Anne Verroust-Blondet

PhD in progress : Mohammad Abu Alhoul, “Communications par lumière visible et communications radio pour La Conduite Automatique”, Mines ParisTech, supervisor: Fawzi Nashashibi, co-supervisor: Oyunchimeg Shagdar

PhD in progress : Zayed Al-Sayed, “Système de localisation redondant en environnement extérieur ouvert pour véhicule urbain automatique”, Télécom ParisTech, supervisor: Anne Verroust-Blondet, co-supervisor: Guillaume Bresson

PhD in progress : David Gonzalez Bautista, “Contrôle coordonné et planification dynamique des trajectoires pour un système de transport cybernétique en milieu urbain instrumenté”, Mines ParisTech, supervisor: Fawzi Nashashibi, co-supervisor: Joshué Pérez-Rastelli

PhD in progress : Younes Bouchaala, “Utilisation de la communication véhicule-à-véhicule pour l'amélioration de la sécurité sur la route”, Université de Versailles, supervisor: Paul Muhlethaler, co-supervisor: Oyunchimeg Shagdar

PhD in progress : Fernando Garrido, “Optimal trajectory generation for autonomous vehicles in smart cities”, Mines ParisTech, supervisor: Fawzi Nashashibi, co-supervisor: Joshué Pérez-Rastelli

PhD in progress : Pierre Merdrignac, “Développement d'un système coopératif Perception-Communication pour l'amélioration de la sécurité des personnes vulnérables”, supervisor: Fawzi Nashashibi, co-supervisor: Oyunchimeg Shagdar and Evangeline Pollard

PhD in progress : Sofiene Mouine, “Identification d'espèces végétales par une approche de description géométrique locale d'images de feuilles”, Télécom ParisTech, supervisor: Anne Verroust-Blondet, co-supervisor: Itheri Yahiaoui

PhD in progress : Guillaume Trehard, “Gestion des intersections pour la conduite urbaine autonome”, Mines ParisTech, supervisor: Fawzi Nashashibi, co-supervisor: Evangeline Pollard

PhD in progress : Zahraa Yasseen, “Garment design and shape description for Sketch-based applications”, Télécom ParisTech, supervisor: Anne Verroust-Blondet, co-supervisor: Ahmad Nasri

9.2.3. Juries

Fawzi Nashashibi was member of the HDR jury of:

- Dominique GRUYER: “Fusion de données: de la perception de l'environnement aux systèmes coopératifs”, Université d'Évry Val d'Essonne, February 28th, 2014.

Fawzi Nashashibi was the President of the jury of:

- Nicole AL-ZOGHBY: “Distributed Data Fusion in VANETs”, Université de Technologie de Compiègne, February 2014.

Fawzi Nashashibi was a jury member of the following PhD students:

- Guillaume BRESSON: “Localisation d'une flotte de véhicules communicants par approche de type SLAM visuel décentralisé”, Université Blaise Pascal – Clermont II, February 2014.
- Maxime BOUCHER: “Quelques contributions en localisation et cartographie simultanées multi-capteurs : application à la réalité augmentée”, Université d'Évry Val d'Essonne, September 2014.
- Laetitia LAMARD: “Approche modulaire pour le suivi temps réel de cibles multi-capteurs pour les applications routières”, Université Blaise Pascal – Clermont II, July 10th, 2014.

9.3. Popularization

Several members of the team have participated in:

- The exhibition Futur-en-Seine (June 12-22 2014).
- The final Demonstration of Link & Go Project: Automated driving functionalities and SLAM, September 2014 at Magny les Hameaux, France.
- Showcase of CityMobil2: Autonomous maneuver in urban scenarios. September 2014, at Leon, Spain.
- Showcase of CATS project: Autonomous functionalities. October 2014, at Ploiesti, Rumania.
- Large-scale demonstration of automated transport of CityMobil2, December 2014, at La Rochelle.

SECRET Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. general chair, scientific chair

- A. Canteaut serves as a chair of the steering committee of *Fast Software Encryption (FSE)*;
- N. Sendrier serves on the steering committee of *Post-quantum cryptography (PQCrypto)*;
- M. Naya Plasencia serves on the steering committee of the *Coding and Cryptography* group of GDR-IM <https://crypto.di.ens.fr/c2:main>;
- J.-P. Tillich served as a scientific organizer of the International workshop on quantum LDPC codes, July 14-16, Waterloo (Canada).
- WCC 2015 to be held in Paris, April 13-17, 2015, is organized by the project-team. The organizing committee is composed of A. Canteaut, G. Leurent, M. Naya Plasencia.

9.1.1.2. member of the organizing committee

- QCrypt 2014: September 1-5, Paris (France): A. Leverrier.
- Advances in Quantum Cryptography Workshop, AQC 2015: March 23-24, 2015, Paris (France): A. Chailloux and A. Leverrier.

9.1.2. Scientific events selection

9.1.2.1. chair of the conference program committee

- WCC 2015: April 13-17, 2015, Paris (France): P. Charpin, N. Sendrier and J.P. Tillich (co-chairs).

9.1.2.2. member of the conference program committee

- FSE 2014: March 2-5, 2014, London, UK (A. Canteaut);
- Africacrypt 2014: May, 28-30, 2014, Marrakech, Morocco (M. Naya-Plasencia);
- Eurocrypt 2014: May, 11-15, 2014, Copenhagen, Denmark (M. Naya-Plasencia);
- YACC 2014: June, 9-14, 2014, Porquerolles, France (N. Sendrier, J.-P. Tillich);
- ACNS 2014: June 10-13, 2014, Lausanne, Switzerland (A. Canteaut);
- SAC 2014: August 14-15, 2014, Montréal, Canada (A. Canteaut, M. Naya-Plasencia);
- Crypto 2014: August 17-21, 2014, Santa Barbara, USA (M. Naya-Plasencia);
- SCN 2014: September 3-5, 2014, Amalfi, Italy (G. Leurent);
- WAIFI 2014: September 26-28, 2014 (J.-P. Tillich);
- PQCrypto 2014: October 1-3 2014, Waterloo, Canada (N. Sendrier, J.-P. Tillich);
- Latincrypt 2014: September, 17-19, 2014, Florianópolis, Brazil (N. Sendrier);
- SETA 2014: November 24-28, 2014, Melbourne, Australia (P. Charpin);
- Asiacrypt 2014: December 7-11, 2014, China (M. Naya-Plasencia);
- Indocrypt 2014: December 14-17, 2014, New Delhi, India (A. Canteaut).
- FSE 2015: March 8-11, 2015, Istanbul, Turkey (A. Canteaut, G. Leurent, M. Naya-Plasencia);
- CT-RSA 2015: April 20-24, 2015, San Francisco, USA (M. Naya-Plasencia);
- Eurocrypt 2015: April 26-30, 2015, Sofia, Bulgaria (A. Canteaut);
- Finite Fields and their applications $F_{q^{12}}$, Saratoga, USA, July 13-17, 2015 (A. Canteaut);

- SAC 2015: August 12-14, 2015, Sackville, Canada (M. Naya-Plasencia);
- Crypto 2015: August 16-20, 2015, Santa Barbara, USA (A. Canteaut);
- National workshop on Coding and Cryptography (Journées C2), March 24-28, 2014, Les Sept Laux, France, (M. Naya-Plasencia, J.-P. Tillich).

9.1.3. Journal

9.1.3.1. member of the editorial board

- *Designs, Codes and Cryptography*, associate editor: P. Charpin.
- *Finite Fields and Their Applications* associate editors: A. Canteaut, P. Charpin.
- *Annals of telecommunications*, associate editor : J.-P. Tillich.

9.1.4. Other responsibilities in the national community

- N. Sendrier is a vice-chair of the “Commission d’Evaluation” at Inria;
- A. Canteaut is a member of the “Comité de pilotage” of the Fondation Sciences Mathématiques de Paris;
- N. Sendrier served on the selection committee for “Directeurs de recherche (DR2)” at Inria;
- A. Canteaut served on the selection committee for “chargés de recherche” at the Paris-Rocquencourt Inria research center;
- N. Sendrier served on the selection committee for “chargés de recherche” at the Sophia Antipolis - Méditerranée Inria research center;
- A. Canteaut served on the selection committee for promotion to the position of associate professor at DTU (Denmark);
- A. Canteaut served on the selection committee for promotion to the position of associate professor at ISI Kolkata (India);
- J.-P. Tillich is in charge of “Formation par la recherche” for the Paris-Rocquencourt Inria center.
- A. Chailloux served on the jury for the 2014 Gilles Kahn thesis prize, November 2014, Paris.

9.1.5. Invited talks

- A. Canteaut, *Chiffrements à bas coût : comment chiffrer et déchiffrer avec des opérations similaires*, Journées Nationales du GDR Informatique Mathématique, Paris, France, January 2014.
- A. Chailloux, *Parallel repetition of entangled games via the superposed information cost*, Quantum Information Processing - QIP 2014, Barcelona, Spain, February 2014.
- A. Chailloux, *Parallel repetition of entangled games via the superposed information cost*, Asian Quantum Information Science Conference - AQIS 2014, Tokyo, Japan, August 2014.
- M. Naya Plasencia, *On Lightweight Block Ciphers and Their Security*, Indocrypt 2014, New Delhi, India, December 2014.
- N. Sendrier, *QC-MDPC-McEliece: A public-key code-based encryption scheme based on quasi-cyclic moderate density parity check codes*, Workshop “Post-Quantum Cryptography: Recent Results and Trends”, Fukuoka, Japan, November 3-4, 2014.
- N. Sendrier, *Best known attacks on code-based cryptosystems: state of the art and perspectives*, DIMACS Workshop on The Mathematics of Post-Quantum Cryptography, Piscataway, NJ, USA, January 12-16, 2015.
- J.P. Tillich, *Recent attacks on McEliece schemes based on Goppa codes*, Yet Another Conference on Cryptography - YACC 2014, Porquerolles Island, France, June 2014;
- J.P. Tillich, *Turning error-reducing quantum turbo codes into error-correcting codes*, Third International Conference on Quantum Error Correction - QEC 14, Zurich, Switzerland, December 2014.

The members of the project-team have also been invited to give talks to some workshops or international seminars, including:

- G. Leurent, *New Generic Attacks on Hash-based MACs*, Dagstuhl Seminar 14021 - Symmetric Cryptography, Dagstuhl, Germany, January 2014.
- A. Leverrier, *A combinatorial approach to contextuality*, Meeting on Reliability, Security and Quality Assurance, Bordeaux, France, September 2014.
- A. Chailloux, *Strong connections between quantum encodings, non-locality and quantum cryptography*, Dimension Witness workshop - DIMWIT 2014, Sopot, Poland, June 2014.
- A. Chailloux, *Parallel repetition of entangled games via the superposed information cost*, Workshop on quantum games, Berkeley, U.S.A., February 2014.
- A. Chailloux, *Parallel Repetition of Free Entangled Games: Simplification and Improvements*, PCQC inaugural meeting, Paris, France, August 2014.
- A. Chailloux, *Parallel Repetition of Free Entangled Games: Simplification and Improvements*, Theory Seminar of UAB, Barcelona, Spain, November 2014.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: A. Canteaut, *Stream ciphers*, 6 hours, M1, Telecom ParisTech, France;

Master: A. Canteaut, *Introduction to symmetric cryptography*, 7 hours, M1, Telecom ParisTech, France;

Master: A. Canteaut, *Error-correcting codes and applications to cryptography*, 11 hours, M2, University Paris-Diderot (MPRI), France;

Master: N. Sendrier, *Code-based cryptography*, 4.5 hours, M2, University Paris-Diderot (MPRI), France;

Master: J.-P. Tillich, *Introduction to Information Theory*, 32 hours, M2, Ecole Polytechnique, France;

The members of the project-team also gave advanced lectures to several summer schools for PhD students:

- *Design and security of cryptographic algorithms and devices for real-world applications*, Sibenik, Croatia, June 1-6, 2014: A. Canteaut and M. Naya-Plasencia.
- *Post-Quantum Cryptography Summer School*, Waterloo, Ontario, Canada, September 29-30, 2014: N. Sendrier.

9.2.2. Supervision

PhD: Marion Bellard, *Influence of the mapping in the reverse-engineering of a communication systems*, University Pierre-et-Marie Curie, January 30, 2014, supervisor: N. Sendrier

PhD: Grégory Landais, *Implementations of code-based cryptosystems and of their cryptanalyses*, University Pierre-et-Marie Curie, September 18, 2014, supervisor: N. Sendrier

PhD: Denise Maurice, *Quantum error-correcting codes with an efficient decoding algorithm*, University Pierre-et-Marie Curie, June 26, 2014, supervisor: J.-P. Tillich

PhD: Valentin Suder, *Differential properties of permutations and applications in symmetric cryptography*, University Pierre-et-Marie Curie, November 5, 2014, supervisor: P. Charpin

PhD in progress: Virginie Lallemand, *Cryptanalysis for symmetric cryptography*, since October 2013, supervisors: M. Naya-Plasencia and A. Canteaut

PhD in progress: Joëlle Roué, *Security analysis of block ciphers*, since September 2012, supervisor: A. Canteaut

PhD in progress: Audrey Tixier, *Recovering turbo-codes and LDPC codes*, since October 2013, supervisor: J.P. Tillich

PhD in progress: Julia Chaulet, *Study of public-key cryptosystems based on MDPC quasi-cyclic codes*, since February 2014, CIFRE convention with Thales, supervisor: N. Sendrier

PhD in progress: Kaushik Chakraborty, *Position-based Quantum Cryptography*, since October 2014, supervisors: A. Leverrier, J.P. Tillich

PhD in progress: Adrien Hauteville, *Rank-metric-based Cryptosystems*, since October 2014, supervisors: P. Gaborit (Univ. Limoges) and J.-P. Tillich

9.2.3. Juries

- Marion Bellard, *Influence of the mapping in the reverse-engineering of a communication system*, University Pierre-et-Marie Curie, January 30, 2014, committee: N. Sendrier (supervisor) and J.-P. Tillich;
- Nathan Walk, *Continuous Variable Quantum Communication*, The University of Queensland, Australia, March 2014, A. Leverrier (reviewer).
- Florian Caullery, *Polynomials over finite fields for cryptography*, Université Aix-Marseille, May 28, 2014, A. Canteaut (chair);
- Denise Maurice, *Quantum error-correcting codes with an efficient decoding algorithm*, University Pierre-et-Marie Curie, June 26, 2014, committee: J.-P. Tillich (supervisor);
- Deng Tang, *Boolean functions for stream and block-ciphers*, Université Paris 8, July 1, 2014, A. Canteaut (chair);
- Anna Pappa, *Quantum cryptographic primitives in realistic scenarios*, Télécom ParisTech, July 10, committee: J.-P. Tillich;
- Gregory Landais, *Implementations of code-based cryptosystems and of their cryptanalyses*, University Pierre-et-Marie Curie, September 18, 2014, committee: N. Sendrier (supervisor) and J.-P. Tillich;
- Valentin Suder, *Differential properties of permutations and applications in symmetric cryptography*, Université Pierre et Marie Curie, November 5, 2014, P. Charpin (supervisor), A. Canteaut;
- François Arnault, *Contributions in discrete mathematics and cryptographic applications* (Habilitation), University of Limoges, November 12, 2014, committee: J.-P. Tillich (reviewer);
- Marion Candau, *Non Abelian convolutional codes*, University de Bretagne Occidentale, December 9, 2014, committee: J.-P. Tillich (reviewer);
- Gaétan Murat, *Weakly structured error correcting codes for the rank metric with applications to cryptography*, University of Limoges, December 9, 2014, committee: J.P. Tillich (reviewer).
- S. Raizada, *Some Results On Analysis And Implementation Of HC-128 Stream Cipher*, ISI Kolkata (India), January 2015, A. Canteaut (reviewer).

9.3. Popularization

- Anne Canteaut has been invited to give the annual Computer Science Talk for the new students at Ecole Polytechnique, Palaiseau, June 2014 [79].

SIERRA Project-Team

8. Dissemination

8.1. Scientific Animations

8.1.1. Editorial boards

- A. d'Aspremont, Associate Editor, Optimization Methods & Software (2010-2014)
- A. d'Aspremont, Associate Editor, SIAM Journal on Optimization (2013-...)
- F. Bach, Journal of Machine Learning Research, Action Editor.
- F. Bach, IEEE Transactions on Pattern Analysis and Machine Intelligence, Associate Editor.
- F. Bach, Information and Inference, Associate Editor.
- F. Bach, SIAM Journal on Imaging Sciences, Associate Editor.
- F. Bach, International Journal of Computer Vision, Associate Editor

8.1.2. Area chair

- F. Bach, International Conference on Machine Learning, 2013

8.1.3. Workshop and conference organization

- A. d'Aspremont, Workshop preparation for les Houches in Jan 2015: Optimization and Statistical Learning, with Zaid Harchaoui, LEAR, Inria and LJK, Anatoli Juditsky, LJK, Université Joseph Fourier, Jérôme Malick, CNRS and LJK et Philippe Rigollet, ORFE, Princeton University, USA.
- A. d'Aspremont, session organized at SIOPT 2014 in San Diego.
- F. Bach, Workshop co-chair for NIPS 2014.
- V.Perchet, Organizer, summer school "Ecole d'été pluridisciplinaire de Théorie des Jeux", Aussois (7-13 September 2014).

8.1.4. Awards

- F. Bach, 10-year best paper award, ICML 2014.
- S. Lacoste-Julien, MCMCSK_i IV Honorable Mention Poster Prize (January 2014).

8.1.5. Other

- A. d'Aspremont, Scientific committee, programme Gaspard Monge pour l'Optimisation.

8.1.6. Invited presentations

- S. Arlot, "Kernel change-point detection", Workshop "Kernel methods for big data" (Université Lille 1, March 31 - April 2, 2014)
- S. Arlot, "Optimal model selection with V-fold cross-validation: how should V be chosen?", Seventh International Conference on High Dimensional Probability (Institut d'Études Scientifiques de Cargèse, May 26-31, 2014).
- A. d'Aspremont, "Spectral Ranking using Seriation." Journée big data, SPOC seminar, LIP6, Université de Paris VI.
- A. d'Aspremont, "Spectral Ranking using Seriation." Workshop on Semidefinite Optimization, Approximation and Applications, Simons Institute, Berkeley, Sept. 2014.
- A. d'Aspremont, "Spectral Ranking using Seriation." Cambridge statistics seminar, November 2014.

- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Oxford robotics seminar, March 2014
- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Department of Mathematical Engineering seminar, UCL, Louvain-la-Neuve, February 2014.
- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Colloque CNRS MASTODONS, January 2014.
- A. d'Aspremont, "Convex Relaxations for Permutation Problems." Lunteren Conference on the Mathematics of Operations Research, January 2014.
- A. d'Aspremont, "An Optimal Affine Invariant Smooth Minimization Algorithm." Lunteren Conference on the Mathematics of Operations Research, January 2014.
- A. d'Aspremont, "Phase Recovery, MaxCut and Complex Semidefinite Programming." SLAC Photon Science Seminar, Stanford, March 2014.
- A. d'Aspremont, "Optimisation et apprentissage." Colloquium Jacques Morgenstern, Inria Sophia-Antipolis, Avril 2014.
- F. Bach, Invited talk at workshop on stochastic gradient methods, IPAM, Los Angeles (February 2014).
- F. Bach, Seminar at University of Logano (March 2014).
- F. Bach, Invited tutorial at Eurandom Workshop, Eindhoven (March 2014).
- F. Bach, Invited talk at the Centre de Recerca Matemàtica (CRM), Barcelona (April 2014).
- F. Bach, Seminars at Oxford University (May 2014).
- F. Bach, Invited talk at "Journées de la SFDS", Rennes (June 2014).
- F. Bach, Invited talk at the conference CAP, Saint-Etienne (July 2014).
- F. Bach, Invited tutorial at the IFCAM Summer school, Bangalore, India (July 2014).
- F. Bach, Invited talk at the Duke/UCL workshop, London (September 2014).
- F. Bach, Keynote talk at the conference ECML, Nancy (September 2014).
- F. Bach, Seminar at the University of Vienna, Austria (November 2014).
- F. Bach, Invited talk at the Swiss Statistics Seminar, Berne (November 2014).
- F. Bach, Invited talk at the CIFAR meeting on Neural Computation & Adaptive Perception, Montreal, Canada (December 2014).
- N. Boumal, Journée conjointe des GDR, ISIS and MIA: optimisation géométrique sur les variétés, Nov. 21, Paris.
- N. Boumal, Bordeaux University GIO 2014 international workshop, on the Geometry of Information and Optimization, Dec. 4 & 5, Bordeaux.
- F. Fogel, "Convex Relaxations for Permutation Problems", Journées MAS de Toulouse, August.
- F. Fogel, workshop "Algorithm and Data Science" at Microsoft Research Cambridge, May 15.
- S. Lacoste-Julien, "Frank-Wolfe optimization insights in machine learning", Tsinghua University, Beijing, China, June.
- S. Lacoste-Julien, "Sequential Kernel Herding: Frank-Wolfe Optimization for Particle Filtering", invited talk at Journées MAS 2014, Institut de Mathématiques de Toulouse, Toulouse, France, August.
- S. Lacoste-Julien, "Recent Advances in Frank-Wolfe Optimization", invited talk at the 4th IMA Conference on Numerical Linear Algebra and Optimisation, Birmingham, UK, September.
- S. Lacoste-Julien, "Sequential Kernel Herding: Frank-Wolfe Optimization for Particle Filtering", McGill University, Montreal, Canada, December.

R. Lajugie, invitation at the workshop "Kernel methods for big data" in Lille (March, 31st -April, 2nd).

V. Perchet, Workshop "Optimal Cooperation, Communication, and Learning in Decentralized Systems", Banff, Canada (October 16, 2014). Blackwell Approachability in Absorbing Games.

V. Perchet, Conference "PGMO-COPI", Paris (October 28, 2014). Online multiclass classification via Blackwell approachability.

V. Perchet, Conference "PGMO-COPI", Paris (October 30, 2014). New results in bandits problems with applications.

V. Perchet, Séminaire probas/stats, Orsay (December 4, 2014). From Bandits to Ethical Clinical Trials. Optimal Sample Size for Multi-Stage Problems.

V. Perchet, Conference "New Procedures for New Data", CIRM, Marseille (December 15, 2014). From Bandits to Ethical Clinical Trials. Optimal Sample Size for Multi-Stage Problems.

N. Shervashidze, "Representing graphs for machine learning", Séminaire de Statistiques, Institut Henri Poincaré, Paris, June.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

A. d'Aspremont, Creation of a Master's program MASH (Mathématiques, Apprentissage et Sciences Humaines), with ENS - Paris Dauphine. Started September 2014.

Licence : A. d'Aspremont, L3 course on Optimization: ENSAE, 24h

Mastère: A. d'Aspremont, course on Optimization: MVA, ENS Cachan, 18h. item Mastère (M2) : F. Bach, G. Obozinski, Introduction aux modèles graphiques (30h), Master MVA (ENS Cachan).

Mastère: S. Arlot and F. Bach, "Statistical learning", 24h, Mastère M2, Université Paris-Sud, France.

Mastère (M1): S. Lacoste-Julien, F. Bach, R. Lajugie: "Apprentissage statistique", 35h, Ecole Normale Supérieure, Filière "Math-Info", deuxième année.

8.2.2. Supervision

PhD in progress: Vincent Roulet, October 2014, A. d'Aspremont.

PhD in progress: Nicolas Flammarion, September 2014, A. d'Aspremont and F. Bach.

PhD in progress: Fajwel Fogel, September 2012, A. d'Aspremont and F. Bach.

PhD in progress: Rémi Lajugie, September 2012, S. Arlot and F. Bach.

PhD in progress: Damien Garreau, September 2014, S. Arlot (co-advised with G. Biau).

PhD in progress: Anastasia Podosinnikova, December 2013, F. Bach and S. Lacoste-Julien.

PhD in progress: Jean-Baptiste Alayrac, September 2014, S. Lacoste-Julien, Josef Sivic and Ivan Laptev.

PhD in progress: Aymeric Dieuleveut, September 2014, F. Bach.

PhD in progress: Christophe Dupuy, January 2014, F. Bach, co-advised with Christophe Diot (Technicolor).

PhD in progress: Sesh Kumar, September 2013, F. Bach.

PhD in progress: Fabian Pedregosa, September 2012, F. Bach, co-advised with Alexandre Gramfort (Telecom).

PhD in progress: Rafael Rezende, September 2013, F. Bach, co-advised with Jean Ponce.

PhD in progress: Thomas Schatz, September 2012, F. Bach, co-advised with Emmanuel Dupoux (ENS, cognitive sciences).

8.2.3. Juries

A. d'Aspremont, member of the PhD Committee for Pierre-André Savalle at Ecole Central de Paris on Oct. 21 2014.

A. d'Aspremont, member of the PhD Committee for Nicolas Boumal at université Catholique de Louvain, Belgium on Feb. 14 2014.

F. Bach, member of the PhD committee of Samuel Vaiter (Dauphine), Rajen Shah (Cambridge), Anthony Bourrier (Rennes)

F. Bach, member of the HDR committee of Josef Sivic and Sylvain Arlot.

8.3. Popularization

S. Lacoste-Julien, Lecture "Apprentissage statistique et big data", Colloque Algorithmique et Programmation, CIRM, Luminy, France, April.

S. Lacoste-Julien, General public talk to high school students having participated in the mathematics olympiad of académie de Versailles "Apprentissage statistique et big data" at Inria-Rocquencourt, Rocquencourt, France, June.

S. Lacoste-Julien, Demi-heure de la science "Apprentissage automatique et big data", at Inria-Rocquencourt, Rocquencourt, France, November.

S. Lacoste-Julien, July-Dec: helped Sydo for making a popularization video for Inria on the theme of "Simulation and machine learning".

SISYPHE Project-Team (section vide)

SMIS Project-Team

9. Dissemination

9.1. Scientific Animation

Philippe Pucheral:

- PC member of EDBT' 14, MOBIWIS' 14, EDBT' 15, MOBIWIS' 15, DATA' 15
- Member of the direction committee of the PRISM Lab.
- Member of the HDR committee of the STV doctoral school (UVSQ)
- Elected member of the ED STIC doctoral school of University Paris-Saclay, 'Data, Knowledge and Interactions' committee (about 250 PhD students)
- Co-founder of the "Masses de Données Distribuées" French summer school and co-organizer of its last three editions (2010, 2012, 2014)

Luc Bouganim:

- PC member of EDBT' 15, PDA@IOT' 14, HardBD' 14, EUC' 14, BDA' 14
- President of the Inria Post-Doc and Delegation Commission
- Member of the Inria "Bureau du Comité des Projets" (BCP)
- Member of the Inria "Cordi-S" (Inria PhD grant) commission
- Member of the Inria "PES" commission
- Member of the UVSQ-PRiSM "Conseil de Laboratoire"

Nicolas Ancaux:

- PC member of BDA' 14 Demo. Track
- Member of the Inria " Commission des Développements Technologiques " (CDT)

Benjamin Nguyen:

- PC member of ECML-PKDD' 14, ACOMP' 14, EDA' 14
- Member of APVP Steering Committee
- Member of recruiting Committee of CNAM' 14, Paris-Sud' 14
- Member of PRiSM Steering Committee until 08/14
- Co-director (with Fabrice Le Guel) of the Institut de la Société du Numérique, Privacy WG.

Quoc-Cuong To:

- PC member of FDSE'2014
- External reviewer of EDBT'2014

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

SMIS is a joint project-team with University of Versailles St-Quentin (UVSQ) and CNRS. Hence SMIS members are naturally deeply involved in teaching.

Besides academic teaching, SMIS has set up a software and hardware platform named 'PDIS- Privacy by Design Information System' which is used to conduct programming activities with Master and Engineer students. This platform capitalizes on the PlugDB engine. It is now available at ENSIIE and INSA Centre Val de Loire engineer schools and at UVSQ. It is also being integrated in the UVSQ FabLab (VSL - Versailles Sciences Lab).

P. Pucheral:

- Full professor at UVSQ : courses on databases, DBMS architecture and security in Master1, Master2 and engineer school ISTY
- Director of the research Master COSY (UVSQ)
- Co-Director of the future Master DataScale to be launched at Univ. Paris-Saclay (UPSay) in 2015 with UVSQ, ENSIIE, Télécom SudParis and Télécom ParisTech

L. Bouganim: (90h/y)

- Courses on DBMS architecture, data security, database technology in Master1 and Master2 (AFTI, Orsay) and in engineering school (ENST Paris)

B. Nguyen:

- Courses on Databases, programming in Masters 2 and Licence
- MOOC on Introduction to relational databases (co authors Serge Abiteboul, Yannick Le Bras)
- Director of the UVSQ Computer Science Masters until august 2014
- Co-Director (with Franck Quessette, UVSQ) of the in-house training course for Computer Science high-school teachers at UVSQ for Academie de Versailles
- Member of Labex Digicosme Master's Committee until august 2014

N. Anciaux: (90h/y)

- Courses on database internal mechanisms and database security, in Master1 and Master2 (AFTI, Orsay) and in engineering school (ENSTA ParisTech, Telecom Paristech)

I. Sandu Popa:

- Associate professor at UVSQ. Courses on databases, DBMS architecture and security in Licence, Master1, Master2 and engineer school ISTY

P. Tran-Van:

- Courses on distributed and secure databases in engineering school ENSIIE.

9.2.2. Supervision

PhD in progress : Quoc-Cuong To, Secure Global Computations on Personal Data Servers, since October 2012, co-supervised by Benjamin Nguyen and Philippe Pucheral

PhD in progress : Saliha Lallali, Document Indexing for Embedded Personal Databases, since November 2012, co-supervised by Nicolas Anciaux, Iulian Sandu Popa and Philippe Pucheral

PhD in progress : Athanasia Katsouraki, Access and Usage Control for Personal Data in Trusted Cells, since October 2013, co-supervised by Luc Bouganim and Benjamin Nguyen

PhD in progress : Niv Dayan, Database Algorithms and Flash Internals, since December 2011, co-supervised by Philippe Bonnet and Luc Bouganim

PhD in progress : Dai-Hai Ton-That, Secure Management and Sharing of Private Personal Traces, since November 2012, co-supervised by Iulian Sandu Popa and Karine Zeitouni (Univ. of Versailles)

PhD in progress : Paul Tran Van, Secure Data Sharing in Personal Cloud, since October 2014, Co-supervised by Benjamin André (Cozy Cloud), Philippe Pucheral and Nicolas Anciaux.

9.2.3. Juries

P. Pucheral:

- PhD committee member (president) of Sara Hachem (UVSQ, February 2014)
- HDR reviewer of Sébastien Gambis (U. Rennes 1, June 2014)
- HDR committee member (president) of Sophie Chabridon (Télécom SudParis, November 2014)
- HDR committee member of Nicolas Anciaux (UVSQ, December 2014)
- HDR committee member of Sofian Maabout (U. Bordeaux, December 14).

L. Bouganim:

- PhD committee member of Matteo Casalino (Univ. Claude Bernard - Lyon 1, July 2014)
- PhD committee member of Jean-Pierre Lozi (UPMC, Paris 6, July 2014).
- PhD reviewer of Pierre Olivier (Université de Bretagne Sud, December 2014).
- HDR tutor of Nicolas Anciaux (UVSQ, December 2014).

9.3. Popularization

- "Les enjeux du Big Data", TV interview of P. Pucheral, Future-Mag, Arte, September 20th, 2014.
- Tutorial on experimental methodology at the BDA summer school 2014 "Masses de données distribuées". L. Bouganim
- Tutorial on managing personal data with strong privacy guarantees at EDBT 2014 [18].
- Présentation invitée au Lycée Albert Einstein sur 'Minimum Exposure', Sainte-Geneviève-des-Bois, Apr. 2014, B. Nguyen.
- Séminaire en deux parties à Luminy, pour les enseignants de CPGE sur 'les bases de données en CPGE, programme officiel et aspects transactionnels', Marseille, 2014-04-22, B. Nguyen.
- Présentation invitée aux journées "La Science Informatique pour tous les lycéens", à Rocquencourt, Apr. 2014, B. Nguyen.
- Le droit à l'oubli numérique, table ronde, Colloque 'La protection des données personnelles : approche pluridisciplinaire', Paris, Dec. 2014, B. Nguyen.
- 'Représenter et interroger efficacement de grands volumes de données : une introduction aux bases de données relationnelles', olympiades de mathématiques, Paris, May 2014, B. Nguyen
- 'Comment garantir la confidentialité des données médicales ?', Environrisk, Atelier risques numériques, Nov. 2014. Chairman: B. Nguyen (Inria). Speakers : N. Anciaux (Inria), C. F. Viala (YesProfile).
- 'Garantir la confidentialité des données personnelles', Futur en Seine, Rencontres Inria-Industries, June 2014, N. Anciaux.
- 'Vers un modèle de gestion des données respectueux de la vie privée : application à la collecte limitée d'informations personnelles', IREP "BIG DATA" Seminar, May 2014, N. Anciaux.
- 'Les patients dans l'écosystème de santé - Enjeux d'information et questions de communication', International Seminar organized by the "Institut des sciences de la communication CNRS" with the participation of the "Groupe de réflexion avec les associations de malades (GRAM Inserm)", Dec. 2014, N. Anciaux et P. Pucheral.
- 'La protection des données personnelles - approche pluridisciplinaire', Seminar organized by the Digital Society Institute (ISN), Dec. 2014, N. Anciaux and P. Pucheral
- 'Démonstration du Dossier Médico-Social Portable et sécurisé', Rencontres Inria Industrie, Télécoms du futur, Nov. 2014, Q. Lefebvre and N. Anciaux.
- 'Table ronde : Sécurité des Réseaux et Contenus', Rencontres Inria Industrie, Télécoms du futur, Nov. 2014, L. Bouganim

TEMPO Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific events

8.1.1.1. Invitation

Vania Joloboff was invited for a short stay at Academia Sinica in Taipei Taiwan, in October 2014.

8.1.1.2. Member of the organizing committee

Vania Joloboff jointly organized with ECNU staff the LIAMA Open Day in Shanghai in July 2014

Vania Joloboff jointly organized and chaired a session at the LIAMA Workshop for collaboration between Europe and China in May 2014.

Mingsong Chen was invited to served as a Session Chair of the conference SERE 2015.

8.1.1.3. Member of the conference program committee

Vania Joloboff is program committee member of DATE conference workshop on Model Implementation Fidelity.

Mingsong Chen served as a Program Committee member of International Conference on VLSI Design.

Mingsong Chen served as a Program Committee member of the conference SAC 2015.

Mingsong Chen served as a Program Committee member of the conference DATE 2015.

8.1.1.4. Reviewer

Mingsong Chen was a reviewer for the conferences VLSID 2015, SAC 2015, DATE 2015, DAC 2015.

8.1.2. Journal

8.1.2.1. Member of the editorial board

Mingsong Chen serves as an associate editor of Journal of Circuits, Systems and Computers.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Virtual Prototyping

Vania Joloboff : Virtual Prototyping, ECNU SEI

Master Students

8.2.2. Supervision

Mingsong Cheng and Vania Joloboff started supervision of several Master and PhD. students at East China Normal University.

8.2.3. Juries

Vania Joloboff was jury member of PhD defence for Yanwen Chen, a double PhD degree of East China Normal University and University of Nice.

WHISPER Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. Member of the organizing committee

Julia Lawall was a member of the SIGPLAN Executive Committee, which supervises the organization of the various conferences sponsored by SIGPLAN, as well as other SIGPLAN activities.

Gilles Muller is a member of the steering committee of the EuroSys conference.

9.1.2. Scientific events selection

9.1.2.1. Member of the conference program committee

Gilles Muller was a PC member for the conferences VEE, TRIOS, for the workshop APSYS and for the jury of the best EuroSys PhD (Roger Needham award).

Julia Lawall was a PC member for the conferences Modularity and ICDCS.

Pierre-Évariste Dagand was a PC member for WGP 2014, the workshop on generic programming.

9.1.3. Journal

9.1.3.1. Member of the editorial board

Julia Lawall: Higher-Order and Symbolic Computation, Science of Computer Programming.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

9.2.2. Supervision

PhD : Koutheir Attouchi, Managing Resource Sharing Conflicts in an Open Embedded Software Environment, Université Pierre et Marie Curie, 11 juillet 2014, Gilles Muller et Gaël Thomas, CIFRE Orange

PhD : Jean-Pierre Lozi, Towards more scalable mutual exclusion for multicore architectures, Université Pierre et Marie Curie, 16 juillet 2014, Gilles Muller et Gaël Thomas

PhD : Lisong Guo, Boost the Reliability of the Linux Kernel: Debugging Kernel Ooopses, Université Pierre et Marie Curie, 18 décembre 2014, Julia Lawall et Gilles Muller

PhD in progress : Florian David, A profiler for locks in Java servers, octobre 2011, Gilles Muller et Gaël Thomas

PhD in progress : Peter Senna Tschudin, Développement Rapide de Pilotes de Périphériques, mai 2014, Julia Lawall et Gilles Muller

PhD in progress : Valentin Rothberg, Exploration de la génétique des pilotes périphériques, octobre 2014, Julia Lawall et Gilles Muller

PhD in progress : Antoine Blin, Execution of real-time applications on a small multicore embedded system, avril 2012, Gilles Muller et Julien Sopena (Regal), CIFRE Renault

9.2.3. Juries

- Gilles Muller:

- HDR: David Bromberg (University of Bordeaux, reviewer), Michaël Hauspie (reviewer).
- PhD: Jigar Solanki (University of Bordeaux, rapporteur), Pierre-Louis Aublin (University of Grenoble, reviewer), Baptiste Lepers (University of Grenoble), Etienne Millon (University of Pierre et Marie Curie, President)
- Julia Lawall:
 - HDR: David Bromberg (University of Bordeaux, reviewer), Nicolas Anquetil (University of Lille).
 - PhD: Alexandre Lissy (University of Tours, reviewer), Lucia (Singapore Management University)

9.3. Popularization

Julia Lawall presented a tutorial on Coccinelle at ENS (Masters students), the IT University of Copenhagen (PhD students), at the Suse Labs conference (developers), at LinuxCon Europe (developers), and at Middleware (PhD students and researchers).

WILLOW Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific events organisation

9.1.1.1. General chair, scientific chair

- J. Sivic is a program co-chair of IEEE International Conference on Computer Vision (ICCV), 2015.

9.1.1.2. Member of the organizing committee

- Workshop co-organizer, THUMOS Challenge 2014: Action Recognition with a Large Number of Classes, in conjunction with RCCV'14, Zurich, Switzerland (Ivan Laptev).

9.1.2. Scientific events selection

9.1.2.1. Area chairs

- European Conference on Computer Vision (ECCV), 2014 (I. Laptev).
- Asian Conference on Computer Vision (ACCV), 2014 (I. Laptev).
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015 (I. Laptev, J. Ponce).

9.1.2.2. Member of the conference program committee

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2014 (I. Laptev, M. Cho, J. Sivic).
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2015 (R. Arandjelović, M. Cho, J. Sivic).
- European Conference on Computer Vision (ECCV), 2014 (R. Arandjelović, M. Cho, J. Sivic).
- Asian Conference on Computer Vision (ACCV), 2014 (M. Cho, S. Kwak, J. Sun).
- 29th Conference on Artificial Intelligence (AAAI), 2015 (I. Laptev).
- 5th Int Workshop on Human Behavior Understanding (HBU), 2014 (I. Laptev).

9.1.3. Journal

9.1.3.1. Member of the editorial board

- International Journal of Computer Vision (I. Laptev, J. Ponce, J. Sivic).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (I. Laptev).
- Foundations and Trends in Computer Graphics and Vision (J. Ponce).
- Image and Vision Computing Journal (I. Laptev).
- I. Laptev and J. Sivic co-edit a special issue on "Video representations for visual recognition" in the International Journal of Computer Vision.
- J. Sivic co-edits a special issue on "Advances in Large-Scale Media Geo-Localization" in the International Journal of Computer Vision.

9.1.3.2. Reviewer

- International Journal of Computer Vision (R. Arandjelović, P. Bojanowski, M. Cho, S. Kwak, J. Sun).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (R. Arandjelović, M. Cho, S. Kwak).
- IEEE Transactions on Circuits and Systems for Video Technology (B. Ham, S. Kwak).

- IEEE Transactions on Image Processing (B. Ham, J. Sun).
- IEEE Signal Processing Letters (B. Ham).
- Computer Vision and Image Understanding (M. Cho).
- Pattern Recognition (R. Arandjelović).
- Pattern Recognition Letters (B. Ham).
- Signal Processing: Image Communication (B. Ham).
- EURASIP Journal on Image and Video Processing (B. Ham).

9.2. Teaching - Supervision - Juries

9.2.1. HdR

HdR: Josef Sivic, “Visual recognition of objects, people and places”, École normale supérieure Paris.

9.2.2. Teaching

Licence : J. Ponce, “Introduction to computer vision”, L3, Ecole normale supérieure, 36h.

Master : I. Laptev, J. Ponce and J. Sivic (together with C. Schmid, Inria Grenoble), “Object recognition and computer vision”, M2, Ecole normale supérieure, and MVA, Ecole normale supérieure de Cachan, 36h.

Master : I. Laptev, J. Ponce and J. Sivic (together with Z. Harchaoui and J. Mairal, Inria Grenoble and F. Bach), Cours PSL-ITI - Informatique, mathématiques appliquées pour le traitement du signal et l’imagerie, 20h.

Master: I. Laptev, course “Visual object recognition and localization”, SkolTech, Moscow, January 2014, 30h.

Doctorat: I. Laptev, Tutorial on human action recognition, CVPR’14 tutorial “Emerging topics in human activity recognition”.

Doctorat: I. Laptev, course “Visual Recognition: Objects, Actions and Scenes”, University of Trento, Italy, July 2014, 20h.

9.2.3. Supervision

PhD in progress : Jean-Baptiste Alayrac, “Structured learning from video and natural language”, started in 2014, I. Laptev, J. Sivic and S. Lacoste-Julien.

PhD in progress : Mathieu Aubry, “Visual recognition and retrieval of 3D objects and scenes”, started in 2011, J. Sivic and D. Cremers (TU Munich).

PhD in progress : Piotr Bojanowski, “Learning to annotate dynamic video scenes”, started in 2012, I. Laptev, J. Ponce, C. Schmid and J. Sivic.

PhD in progress : Florent Couzinié-Devy, started in 2009, J.Ponce.

PhD in progress : Guilhem Chéron, “Structured modeling and recognition of human actions in video”, started in 2014, I. Laptev and C. Schmid.

PhD in progress : Théophile Dalens, “Learning to analyze and reconstruct architectural scenes”, starting 1 Jan 2015, M. Aubry and J. Sivic.

PhD in progress : Vincent Delaitre, “Modeling and recognition of human-object interactions”, started in 2010, I. Laptev and J. Sivic.

PhD in progress : Warith Harchaoui, “Modeling and alignment of human actions in video”, started in 2011, I. Laptev, J. Ponce and J. Sivic.

PhD in progress : Vadim Kantorov, “Large-scale video mining and recognition”, started in 2012, I. Laptev.

PhD in progress : Maxime Oquab, “Learning to annotate dynamic scenes with convolutional neural networks”, started in Jan 2014, L. Bottou (MSR), I. Laptev and J. Sivic.

PhD in progress : Guillaume Seguin, “Human action recognition using depth cues”, started in 2010, I. Laptev and J. Sivic.

PhD in progress : Matthew Trager, “Projective geometric models in vision”, started in 2014, J. Ponce and M. Hebert (CMU).

PhD in progress : Tuang Hung VU, “Learning functional description of dynamic scenes”, started in 2013, I. Laptev.

9.2.4. *Juries*

- PhD thesis committee:
 - Antoine Fagette, UPMC, 2014 (I. Laptev, rapporteur).
 - Ivo Everts, Amsterdam University, 2014 (I. Laptev).
 - Piotr Bilinski, University of Nice, 2014 (I. Laptev).
 - Laurent Sifre, Ecole Polytechnique, 2014 (J. Sivic).
 - Omid Aghazadeh, KTH Stockholm, 2014 (J. Sivic).
- HDR thesis committee:
 - Josef Sivic, ENS Ulm, 2014 (J. Ponce).
 - Herve Jegou, Université de Rennes, 2014 (J. Ponce).
- Other:
 - Member of the PSL Research Council, 2012- (J. Ponce).
 - Member of the Mathematics and Systems Unit AERES evaluation committee at Mines ParisTech, January 2014 (J. Ponce).
 - Member of the faculty selection committee, Université de Marne la Vallée, 2014 (J. Ponce).
 - Head, AERES committee in charge of CMLA’s evaluation at ENS Cachan, 2014 (J. Ponce).
 - Member of the ESF/FCT evaluation committee for Portuguese research centers, 2014 (J. Ponce).
 - Member of the AERES evaluation committee at Ecole Centrale de Paris, 2014 (I. Laptev).
 - Member of the Inria postdoc selection committee, 2012- (I. Laptev).
 - Member of Inria Commission de developpement technologique (CDT), 2012- (J. Sivic).

9.3. Invited presentations

- M. Cho, Invited talk, Ecole des Ponts ParisTech, Paris, France, Jan. 2014.
- I. Laptev, Plenary speaker, ICVGIP, Dec. 14-17, Bangalore, India, 2014.
- I. Laptev, Invited speaker, Inria Sophia-Antipolis, Dec. 5, 2014.
- I. Laptev, Invited speaker, KU Leuven, Belgium, November 24, 2014.
- I. Laptev, Invited speaker, Steklov Institute of Mathematics, Saint Petersburg, Russia, Nov. 17, 2014.
- I. Laptev, Invited speaker, Aalto Univ., Helsinki, Finland, Aug. 21, 2014.
- I. Laptev, Invited speaker, ECCV’14 Area Chair Workshop, Zurich, Switzerland, June 2014.
- I. Laptev, Invited speaker, CVPR’14 Workshop on Perceptual Organization, Columbus, USA, June 2014.
- I. Laptev, Invited speaker, Idiap Research Institute, Martigny, Switzerland, Feb. 2014.

- I. Laptev, Invited speaker, EPFL, Lausanne, Switzerland, Feb. 2014.
- I. Laptev, Invited speaker, Computer Vision Winter Workshop, Křtiny, Czech Republic, Feb. 2014.
- I. Laptev, Invited speaker, SkolTech, Moscow, Russia, Jan. 2014.
- I. Laptev, Invited speaker, Royal Institute of Technology, Stockholm, Sweden, Jan. 2014.
- J. Ponce, Invited speaker, Nanyang Technological University, Singapore, Dec. 2014.
- J. Ponce, Keynote speaker, 3DV conference, Tokyo, Dec. 2014.
- J. Ponce, Plenary speaker, European Workshop on Visual Information Processing, Paris, Dec. 2014.
- J. Sivic, Invited talk at the Center for Research in Computer Vision, University of Central Florida, April 2014.
- J. Sivic, Seminar, New York University, April 2014.
- J. Sivic, Seminar, University of Oxford, April 2014.
- J. Sivic, Seminar, KTH Stockholm, June 2014.
- J. Sivic, Seminar, Inria Sophia-Antipolis, July 2014.
- J. Sivic, Seminar, MPI Saarbruecken, July 2014.
- J. Sivic, Seminar, UC Berkeley, August 2014.
- J. Sivic, Seminar, Adobe Research, August 2014.
- J. Sivic, Talk at an invited workshop, CIFAR, Montreal, December 2014.
- J. Sivic, Invited talk, Smart City workshop, Paris, June 2014.