



RESEARCH CENTER
Paris - Rocquencourt

FIELD

Activity Report 2012

Section Dissemination

Edition: 2013-04-24

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ABSTRACTION Project-Team

9. Dissemination

9.1. Scientific Animation

9.1.1. Academy Members, Professional Societies

Patrick Cousot is a member of the [Academia Europaea](#).

Patrick Cousot is member of the IFIP working group WG 2.3 on programming methodology.

Patrick Cousot is a member of the Board of Trustees and of the Scientific Advisory Board of the [IMDEA-Software](#) (Instituto madrileño de estudios avanzados—Research Institute in Software Development Technology), Madrid, Spain and of the Asian Association for Foundations of Software (AAFS).

9.1.2. Collective Responsibilities

Patrick Cousot is director of studies in computer science at ENS and member of the *commission de spécialistes* (hiring committee) of ENS.

Patrick Cousot, Antoine Miné and Xavier Rival are members of the lab council of the Laboratoire d'Informatique de l'École normale supérieure.

Jérôme Feret was a member of the *comité de sélection* (hiring committee) to hire an assistant professor at the Université de Lille 1.

9.1.3. Editorial Boards and Program Committees

— Patrick Cousot is member of the advisory board of the [Higher-Order Symbolic Computation](#) journal (HOSC, Springer) and of the [Journal of Computing Science and Engineering](#) (JCSE, Kiise).

Patrick Cousot is member of the steering committees of the Static Analysis Symposium (SAS) and the Verification, Model-Checking and Abstract Interpretation (VMCAI) international conference.

Patrick Cousot was member of the program committees of the Verified Software: Theories, Tools and Experiments (VSTTE 2012), Philadelphia, USA, January 28-29, 2012; Hybrid Systems: Computation and Control (HSCC 2012), Beijing, China, April 17-19, 2012; the Programming Languages day 2012, IBM Thomas J. Watson Center, New York, USA, June 29, 2012; the 19th Static Analysis Symposium (SAS 2012), Deauville, France, September 11-13, 2012; Hybrid Systems: Computation and Control (HSCC 2013), Philadelphia, PA, USA, April 9-11, 2013.

Patrick Cousot was the co-program committee chair of the Workshop on Systems Biology and Formal Methods (SBFM 2012), New York, NY, USA, March 29-30, 2012.

— Radhia Cousot is member of the advisory board of the [Higher-Order Symbolic Computation](#) journal (HOSC, Springer) and the [Central European Journal of Computer Science](#) (CEJCS, Versita & Springer).

Radhia Cousot is member of the steering committees of the Static Analysis Symposium (SAS), the Workshop on Numerical and Symbolic Abstract Domains (NSAD), the Workshop on Static Analysis and Systems Biology (SASB) and the Workshop on Tools for Automatic Program Analysis (TAPAS).

Radhia Cousot is the program committee chair of the 40th ACM SIGACT-SIGPLAN Symposium on Principles of Programming Languages (POPL 2013), Rome, Italy, January 23-25, 2013.

Radhia Cousot was member of the program committee of the 13th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI 2012), January 22-24, 2012, Philadelphia, USA and Radhia Cousot is a member of the 5th NASA Formal Methods Symposium (NFM 2013), May 13-16, 2013, NASA Ames Research Center, California, USA.

— Jérôme Feret is a member of the editorial board of the **Frontiers in Genetics** journal.

Jérôme Feret is a member of the steering committee of the Workshop on Static Analysis and Systems Biology (SASB).

Jérôme Feret was co-program committee chair of the 3rd International Workshop on Static Analysis and Systems Biology (SASB 2012), Deauville, France, September 10, 2012; and of the Workshop on Systems Biology and Formals Methods (SBFM 2012), New York, NY, USA, March 29-30, 2012 and Jérôme Feret is co-program committee chair of the 4th International Workshop on Static Analysis and Systems Biology (SASB 2013), Seattle, WA, USA, June 2013.

Jérôme Feret was member of the program committees of the 4th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO 2012), St Maarten, Netherlands Antilles, March 25-30, 2012; the 2nd International Workshop on Interactions between Computer Science and Biology (CS2Bio 2012), Stockholm, Sweden, June 16, 2012; the International Symposium on Foundations of Health Information Engineering and System (FHIES 2012), Paris, France, August 27-28, 2012; the 40th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2013 ERC), Rome, Italy, January 23-25, 2013. Jérôme Feret is member of the program committee of the 5th International Conference on Bioinformatics, Biocomputational Systems and Biotechnologies (BIOTECHNO 2013), Lisbon, Portugal, March 24-29, 2013; the 4th International Workshop on Computational Models for Cell Processes (CompMod 2013), Turku, Finland, June 11, 2013.

— Jonathan Hayman was a member of the program committees of the 40th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2013 ERC), Rome, Italy, January 23-25, 2013.

— Antoine Miné is a member of the editorial boards of The Scientific World Journal in Computer Science and the Conference Papers in Computer Science journal.

Antoine Miné was co-chair of the program committee of the 19th International Static Analysis Symposium (SAS 2012), Deauville, France, 11–13 September 2012, and local organizer of SAS 2012 and affiliated events NSAD 2012, SASB'12 2012, TAPAS 2012, Deauville, France, 10–14 September 2012.

Antoine Miné was a member of the program committee of the Second International Workshop on Safety and Security in Cyber-Physical Systems (SSCPS 2012); Washington, DC, USA, 20–22 June 2012. Antoine Miné is a member of the program committee of the 20th International Static Analysis Symposium (SAS 2013), Seattle, WA, USA, 20–22 June 2013.

— Xavier Rival is member of the steering committee of the Workshop on Tools for Automatic Program Analysis (TAPAS).

Xavier Rival was member of the program committee of the program committee the European Symposium On Programming (ESOP 2012), Tallinn, Estonia, March 24 - April 1, 2012; the 40th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2013 ERC), Rome, Italy, January 23-25, 2013; the program committee of the program committee the European Symposium On Programming (ESOP 2013), Rome, Italy, March 2013.

9.1.4. Participation in Conferences

POPL: 39th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages, Philadelphia, USA, January 25–27, 2012.

Patrick Cousot attended the symposium and gave a talk on an abstract interpretation framework for termination [17].

Dagstuhl workshop: Dagstuhl Seminar 12051 Analysis of Executables: Benefits and Challenges, Dagstuhl, Germany, January 29–February 3rd, 2012.

Xavier Rival attended the workshop and gave a talk on the verification of programs manipulating complex data-structures.

TSD: 2th Tsinghua Software Day (Tsinghua University, Beijing, China, March 15, 2012).

Patrick Cousot gave a talk on automatic large-scale software verification by abstract interpretation.

- SBFM: Workshop on Systems Biology and Formals Methods (New York, NY, USA, March 29-30, 2012).
Patrick Cousot, Jérôme Feret, and Norman Ferns attended to the workshop. Patrick Cousot and Jérôme Feret co-chaired the workshop. Patrick Cousot gave a talk called “A Causal Introduction to Abstract Interpretation” and Jérôme Feret gave a talk on model reduction of differential systems. Patrick Cousot and Jérôme Feret chaired some sessions.
- ESOP: European Symposium on Programming (Tallinn, Estonia, March 24 – April 1, 2012)
Xavier Rival attended the conference. Xavier Rival chaired a session.
- Bellairs Workshop: Workshop on Theory of Markov Processes (Bellairs Research Institute, Holetown, Barbados, April 2-6, 2012).
Jérôme Feret and Norman Ferns attended to the workshop. Jérôme Feret gave a talk on model reduction of stochastic semantics. Norman Ferns gave a talk on bisimulation metrics for continuous Markov decision processes.
- NFM: 4th NASA Formal Methods Symposium (Norfolk, Virginia, April 3-5, 2012).
Patrick Cousot gave a talk on formal verification by abstract interpretation [12].
- JCOMP: *Cinquièmes rencontres de la communauté française de compilation* (Rennes, France, 18–20 June 2012).
Antoine Miné attended the workshop and gave a talk.
- WING: Fourth International Workshop on Invariant Generation (Manchester, UK, 30 June 2012).
Antoine Miné attended the workshop and gave an invited talk.
- FMSB: Workshop on Formal Methods in Systems Biology (Berkeley, USA, July 7-8, 2012).
Jérôme Feret gave a talk on the model reduction of differential systems.
- Dagstuhl workshop: Information Flow and Its Applications (Schloss Dagstuhl, Dagstuhl, Germany, August 26-31, 2012).
Jérôme Feret and Jonathan Hayman attended to the workshop. Jérôme Feret gave a talk on model reduction of differential semantics. Jonathan Hayman gave a talk on the semantics of Kappa and causal compression. Jérôme Feret chaired a session.
- NSAD: Fourth International Workshop on Numerical and Symbolic Abstract Domains (Deauville, France, September 10, 2012).
Mehdi Bouaziz, Tie Cheng, David Delmas, Antoine Miné, Xavier Rival, Antoine Toubhans, and Caterina Urban attended the workshop. Xavier Rival chaired a session. Mehdi Bouaziz and Antoine Miné gave a talk [14], [23].
- SASB: Third International Workshop on Static Analysis and Systems Biology (Deauville, France, September 10, 2012).
Ferdinanda Cemporesi, Jérôme Feret, Norman Ferns, and Jonathan Hayman attended to the workshop. Jérôme Feret co-chaired the workshop and chaired half of the sessions.
- SAS: 19th International Static Analysis Symposium (Deauville, France, September 11-13, 2012).
Mehdi Bouaziz, Ferdinanda Cemporesi, Tie Cheng, David Delmas, Jérôme Feret, Norman Ferns, Jonathan Hayman, Vincent Laviron, Antoine Miné, Xavier Rival, Caterina Urban, and Antoine Toubhans attended the conference. Antoine Miné co-chaired the conference and chaired two sessions. Tie Cheng gave a talk [16].
- TAPAS: Third International Workshop on Tools for Automatic Program Analysis (Deauville, France, Italy, France, September 14, 2012).
Ferdinanda Cemporesi, Tie Cheng, David Delmas, Jérôme Feret, Norman Ferns, Jonathan Hayman, Antoine Miné, Xavier Rival, Antoine Toubhans, and Caterina Urban attended the workshop.
- Dagstuhl workshop: Coalgebraic Information Flow and Its Applications, Schloss Dagstuhl, Dagstuhl, Germany, October 7-12, 2012.
Norman Ferns attended the workshop.

SBE: Systems Biology Europe, Madrid, Spain, October 16-17, 2012.

Jérôme Feret gave a talk on the model reduction of differential systems.

Workshop MSR Workshop on “MSR-Inria joint centre”, Cambridge (UK), November 5–6, 2012.

Xavier Rival attended the workshop and chaired a session. Xavier Rival gave a demo of **ASTRÉE**.

Workshop lif Workshop “Let’s imagine the future”, Rennes (France), November 7–8, 2012.

Xavier Rival attended the workshop and gave a talk on the verification of embedded programs manipulating complex data-structures.

MOVEP: 10th school of Modelling and Verifying Parallel Processes (Marseille, France, 3–7 Dec. 2012).

Antoine Miné attended the school and gave a talk [24].

APLAS: 10th Asian Symposium on Programming Languages and Systems (Kyoto, Japan, 11–13 Dec. 2012).

Mehdi Bouaziz and Xavier Rival attended to the conference. Mehdi Bouaziz and Xavier Rival gave a talk [15], [26].

FSTTCS: IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, Hyderabad, India, December 15-17, 2012.

Jonathan Hayman attended the conference and gave a talk [20].

9.1.5. Invitations and Participation in Seminars

— Patrick Cousot gave an invited talk at the Computer Science PhD Day, Aula Magna Silvio Trentin, Università Ca’ Foscari di Venezia, Italy, March 12th, 2012, and a distinguished lecture at the School of Computer Science of Carnegie Mellon University, Pittsburgh, PA, USA, April 12, 2012.

— Jérôme Feret gave some talks on model reduction for signaling pathways at the IMDEA-Software (Madrid, Spain) on the 15th of October, 2012, and at the Working Group of the Symbiose team-project (Rennes, France) on the 15th of November, 2012.

— Jonathan Hayman gave a talk at the Working Group on Computational Biology of the École normale supérieure (Paris, France) on the 28th of February, 2012, a talk at the Working Group of CEA List (Saclay, France) on 10th of April, 2012, and a talk at the seminar of the PPS team (Paris, France) on the 14th of June, 2012, about the semantics of Kappa and its causal compression.

— Xavier Rival gave a talk on “MemCAD, A Modular Abstract Domain for Reasoning on Memory States” at Microsoft Research (Redmond, USA) on the 23rd of July, 2012. Xavier Rival gave a talk on “Abstract domains for shape analysis” at CEA, on the 18th of February, 2012. Xavier Rival gave a talk on “MemCAD, a Modular Abstract domain for Reasoning about Memory States”, at the Technical University of Vienna (TUW) on the 4th of September 2012.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence :

- Jérôme Feret, Mathematics, 40h ETD, L1, Licence Frontiers in Life Sciences (FdV), Université Paris-Descartes, France.
- Xavier Rival, Introduction to algorithmics, 40h ETD, L3, École Polytechnique, Palaiseau, France.
- Xavier Rival, Introduction to software verification, 12h ETD, L3, École Nationale Supérieure des Mines, Paris, France.

Master :

- Computational Biology, 9h ETD, M1. Interdisciplinary Approaches to Life Science (AIV), Master Program, Université Paris-Descartes, France.

- Patrick Cousot, Radhia Cousot, 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, 20h ETD, M1, École Polytechnique, Palaiseau, France.

9.2.2. Supervision

PhD & HdR :

PhD: Mattéo Zanioli, Security Analysis by Abstract Interpretation [8], March 2012, Radhia Cousot (co-directed thesis with Agostino Cortesi, University of Venice), Paris VII / Università Ca' Foscari, March 12, 2012.

PhD in progress:

- Mehdi Bouaziz, Static analysis of security properties by abstract interpretation. November 2011, Patrick Cousot, 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).
- 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.
- 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, École Normale Supérieure.

9.2.3. Juries

— Jérôme Feret reviewed the PhD thesis of Vincent Noël (Université Rennes 1, France, December 20, 2012).

— Xavier Rival reviewed the PhD theses of Arnaud Jobin (IRISA, Rennes, France, January 16, 2012), of Marie Pelleau (LINA, Nantes, France, November 29, 2012) and of Arnault Ioualalen (DALI /UPVD, Perpignan, France, December 17, 2012).

9.3. Popularization

— Xavier Rival gave a talk at the “1/2 heure de Science”, at Inria Rocquencourt, on the 6th of December, 2012.

ALPAGE Project-Team

9. Dissemination

9.1. Scientific Animation

- Alpage is involved in the French journal *Traitement Automatique des Langues* (T.A.L., AERES linguistic rank: A). Éric de La Clergerie is “Rédacteur en chef” and was the editor of the special issue 53/2 (2012) on “Time and Space”. Laurence Danlos is a member of the editorial board. Benoît Sagot is a guest editor, jointly with Núria Bel, for a special issue on Language Resources for which Benoît Crabbé is a member of the specific reviewing committee.
- Alpage members were involved in many Program, Scientific or Reviewing Committees for other journals and conferences. For example, Éric de La Clergerie participated to the program committees of CSLP’12, LGC’12, STAIRS’12, NAACL-HLT’12 (Parsing Area), TALN’12 (Scientific Committee), LREC’12 (Scientific Committee), WoLE’2012 (1st International Workshop on Web of Linked Entities) and reviewed for the journal *Computational Linguistics*; Djamé Seddah was a PC member of EMNL2012, TALN 2012, CICLING 2012; and Benoît Crabbé was a reviewer for the journals LRE and *Language Modeling*.
- Alpage, (and more specifically Éric de La Clergerie, Djamé Seddah, and Laurence Danlos) was in charge of the organization of TAG+11 (on Tree Adjoining Grammars and Related Formalisms, <http://alpage.inria.fr/tagplus11>), that was held in Paris (September 2012).
- Laurence Danlos co-organized (with Pierre Zweigembaum, LIMSI, CNRS) a one-day ATALA workshop on Artificial Intelligence and Natural Language Processing that was held in Paris in April 2012.
- Benoît Sagot is elected board member of the French NLP society (ATALA) and Secretary since September 2010.
- Laurence Danlos is a member of the Permanent Committee of the TALN conference organized by ATALA.
- Laurence Danlos is a member of the Scientific Committee of the Linguistics UFR of University Paris Diderot.
- Benoît Sagot is a member of the Governing Board and of the Scientific Board of the LabEx (excellency cluster EFL), as head of the research strand on language resources; Laurence Danlos is a member of the Scientific Board of the LabEx EFL, representing Alpage.
- Djamé Seddah is one of the founders of the statistical parsing of morphologically rich language initiative that started during IWPT’09. He was the program co-chair of the successful SPMRL 2010 NAACL-HLT Workshop and of its 2011 edition that took place during IWPT’11. He co-chaired an ACL 2012 workshop centered around the Syntactic and Semantic Processing of Morphologically Rich Languages. He and Marie Candito are also involved (both as core members, Djamé Seddah as co-chair) into the MRL statistical parsing shared task that will be organized in this context (data are to be released in February 2013 and the results will be presented at EMLP 2013; Marie Candito is in charge of the French data). Moreover, Benoît Sagot is a member of the reviewing committees. Finally, Alpage is a regular sponsor of this series of workshops.
- Djamé Seddah was one of the guest-editors of a Special issue of the *Computational Linguistics Journal* dedicated to the Parsing of Morphologically-Rich Language.
- Djamé Seddah was the program chairs of the French NLP society one-day workshops (until September 2012) and a member of its board.
- Marie Candito organized the Alpage research seminar.

- Benoît Crabbé co-organized the research seminar : lectures in experimental linguistics (Univ P7)
- Benoît Crabbé and Benoît Sagot were project reviewers for the National Research Agency (ANR).

9.2. Participation to workshops, conferences, and invitations

Invited talks and seminars:

- Benoît Sagot gave an invited talk at the workshop on “Computational Approaches to Morphological Complexity” in Surrey, UK and he presented the French Social Media Bank within the Working Group n°9 "Shallow Annotation" of the Consortium Corpus Écrits within the Très Grande Infrastructure de Recherche (TGIR) CORPUS.
- Benoît Sagot was invited to a seminar at Düsseldorf to talk on “Semi-automatic development of lexical resources”.
- Laurence Danlos gave invited seminars at Laboratoire d’Informatique de l’Université Pierre et Marie Curie, France, at Computer Science department of UDM (Université de Montréal) Canada, at ENS Lyon and University Paris Sorbonne in France.
- Djamé Seddah gave an invited seminar at the University of Dusseldorf (Abteilung für Computerlinguistik), was a panelist at the NAACL Workshop on Statistical Analysis of Non Canonical Languages, and gave an invited talk at the Paris 7 Linguistics department.
- Benoît Crabbé gave an invited tutorial at the "Experiences, empiricité, expérimentations en linguistique" at Saint Raphael (organized by the CNRS lab HTL) at gave a talk at the "demi heure de sciences" of Inria’s Paris Rocquencourt center.
- Marie Candito gave an invited talk at the seminar series of the LIMSI’s Groupe Information, Langue Ecrite et Signée (ILES)

Participation to conferences and workshops (in almost all cases, this is associated with at least a talk or a poster presentation):

- Almost all members of Alpage participated to TALN 2012, Grenoble, France.
- Several members of Alpage participated to TAG+11, organized by Alpage in Paris, France.
- Laurence Danlos and Juliette Thuillier participated to CMLF’12 (Congrès Mondial de Linguistique française) in Lyon, France.
- Laurence Danlos and Charlotte Roze participated to the Muldico Exploratory Workshop "Towards a multilingual database of connectives" in Iena, Deutschland.
- Laurence Danlos participated in a Linguistic workshop in Bordeaux.
- Rosa Stern participated to the EACL workshop on Innovative hybrid approaches to the processing of textual data – Poster
- Rosa Stern participated to the AKBC-WEKEX workshop (<http://akbcwekex2012.wordpress.com>) – Poster
- Éric de La Clergerie participated to the 11th International Workshop on Treebanks and Linguistic Theories (TLT11) in Lisbon, Portugal – Paper
- Laurence Danlos, Charlotte Roze, Éric de La Clergerie, Marie Candito participated to LREC’12 in Istanbul, Turkey – Papers
- Laurence Danlos and Éric de La Clergerie participated to the Lexis-Grammar Conference in Nové Hradý, Czech Republic – Paper
- Benoît Sagot participated to LREC’12 in Istanbul, Turkey – 5 oral presentations, 1 poster, and a participation at a workshop.
- Djamé Seddah presented one poster at EVALITA 2012 (Rome), one at LREC 2012 (Istanbul), one talk at COLING 2012 (Mumbai) and one talk at NAACL SANCL 2012 (Montreal).

9.3. Teaching - Supervision - Juries

9.3.1. Teaching

Alpage is in charge of the prestigious cursus of Computational Linguistics of Paris 7, historically the first cursus in France in this domain. This cursus, which starts in License 3 and includes a Master 2 (research) and a professional Master 2, is directed by Laurence Danlos. Marie Candito is in charge of the License 3, and Laurence Danlos is in charge of both Master 2. All faculty members of Alpage are strongly involved in this cursus, but some Inria members also participate in teaching and supervizing internships. Unless otherwise specified, all teaching done by Alpage members belong to this cursus. Teaching by associate members in other universities are not indicated.

Laurence Danlos (Inria partial delegation): Introduction to NLP (3rd year of License, 28h); Discourse, NLU and NLG (2nd year of Master, 28h).

Marie Candito (Inria part time delegation, renewed in September 2012): Information retrieval (2nd year of professional Master, 12h); Clustering and Classification (2nd year of professional Master, 12h); Automatic semantic analysis (2nd year of Master, 12h); Machine translation (1st year of Master, 48h);

Benoît Crabbé: Language data analysis (24h Master 2 P7) ; Logical and Computational structures for language modelling (12h Master 2 MPRI) with S. Schmitz. Introduction to computer science (24h L3 P7); Introduction to Corpus Linguistics (24h L3 P7); Stochastic methods for NLP (24h Master 1 P7); Introduction to Computational Linguistics (24h UFR P7);

Benoît Sagot: Parsing systems (2nd year of Master, 24h).

Charlotte Roze: Introduction to Programming (3rd year of License, 24h); Algorithmics (3rd year of License, 24h).

Juliette Thuilier: Syntactic theories : Lexical-Functional Grammar (3rd year of Licence, 48h); Introduction to syntax (2nd year of License, 24h) at University Paris Sorbonne; Implementation of LFG Grammar (2nd year of License, 12h) at University Paris Sorbonne;

Pierre Magistry: Object Oriented Programming, Java-II (3rd year of licence, 12/24h) ; Syntax : HPSG with LKB (1st year Master, 24h)

Luc Boruta: Introduction to Programming II (3rd year of License, 24h); Algorithmics (3rd year of License, 24h); Language & Computer Science (1st year of License, 12h);

François-Régis Chaumartin: Modélisation (UML) et bases de données (SQL) (2nd year of professional Master, 24h).

Chloé Braud: Programmation 2 Java 24h (L3 LI CM/TP); Sémantique computationnelle 24h (M1 LI TD).

Djamé Seddah (half-delegation since September 2011, renewed for 2012): as an Assistant Professor in CS in the University Paris 4 Sorbonne, member of the UFR ISHA, mainly teaches “Generic Programming and groupware”, “Distributed Application and Object Programming”, “Syntactic tools and text Processing for NLP”, “Machine Translation Seminars” in both years of the Master “Ingénierie de la Langue pour la Gestion Intelligente de l’Information”. Djamé Seddah is also the “Directeur des études” of a CS transversal module for the Sorbonne’s undergraduate students (ie “Certificat Informatique et Internet”).

Ongoing PhDs and PhDs defended in 2012:

PhDs in progress:

- Corentin Ribeyre, *vers la syntaxe profonde pour l’interface syntaxe-sémantique*, started in November 2012, supervised by Laurence Danlos, co-supervised by Djamé Seddah and Éric de La Clergerie.
- Isabelle Dautriche, *Exploring early syntactic acquisition: a experimental and computational approach*, started in September 2012, co-supervised by Benoît Crabbé.

- Marion Baranes, *Correction orthographique contextuelle de corpus multilingues et multicanaux*, started in January 2012, supervised by Laurence Danlos, co-supervised by Benoît Sagot, in collaboration with the *viavoo* company.
- Marianne Djemaa, *Création semi-automatique d'un FrameNet du français, via interface syntaxe-sémantique*, started in October 2012, supervised by Laurence Danlos, co-supervised by Marie Candito
- Chloé Braud, *Développement d'un système complet d'analyse automatique du discours à partir de corpus annotés, bruts et bruités*, started in September 2011, supervised by Laurence Danlos
- Valérie Hanoka, *Construction semi-automatique de réseaux lexicaux spécialisés multilingues*, started in January 2011, supervised by Laurence Danlos, co-supervised by Benoît Sagot
- Enrique Henestroza Anguiano, *Enhancing statistical parsing with lexical resources*, started in November 2009, supervised by Laurence Danlos and co-supervised by Marie Candito and Alexis Nasr.
- Emmanuel Lassalle, *Résolution automatique des anaphores associatives*, started in September 2010, supervised by Laurence Danlos
- Pierre Magistry, *Construction (semi)-automatique de lexiques dynamiques du mandarin*, started in September 2010, supervised by Sylvain Kahane and co-supervised by Benoît Sagot and Marie-Claude Paris
- Charlotte Roze, *Vers une algèbre des relations de discours*, started in October 2009, supervised by Laurence Danlos
- Rosa Stern, *Construction d'une base de référence pour les métadonnées de dépêches d'agence: reconnaissance et résolution jointes d'entités avec adaptation au domaine*, started in November 2009, supervised by Laurence Danlos and co-supervised by Benoît Sagot

PhD defended

- François-Régis Chaumartin, *Extraction automatisée de connaissances d'une encyclopédie*, started in October 2005, supervised by Sylvain Kahane, and defended in September 2012
- Luc Boruta, *Indicators of Allophony and Phonemehood*, started in September 2009, co-supervised by Emmanuel Dupoux (LSCP/ENS) and Benoît Crabbé, defended in September 2012
- Juliette Thuilier, *Contraintes préférentielles et ordre des mots en français*, started in September 2008, supervised by Laurence Danlos and co-supervised by Benoît Crabbé, defended in September 2012

9.3.2. Juries

- Laurence Danlos was a member of the HdR defense committee of Matthieu Constant (University Paris-Est Marne-la-Vallée, Nov. 2012); the title of his dissertation was "Mettre les expressions multi-mots au coeur du Traitement Automatique des Langues - sur l'exploitation de ressources lexicales".
- Éric de La Clergerie was a member of the PhD defense committee of Karen Fort (Université Paris 13, Dec. 2012); the title of her dissertation was "Les ressources annotées, un enjeu pour l'analyse de contenu : vers une méthodologie de l'annotation manuelle de corpus".
- Éric de La Clergerie was a member of the PhD defense committee of Nguyen Van Tien (Université de Pau, Nov. 2012). The title of his dissertation was "Méthode d'extraction d'informations géographiques à des fins d'enrichissement d'une ontologie de domaine".
- Éric de La Clergerie was a member of the PhD defense committee of Milagros Fernandez Gavilanes (Univ. of La Coruña, Spain, Oct. 2012) in quality of co-supervisor. The title of her dissertation was "Adquisición y representación del conocimiento mediante procesamiento del lenguaje natural".

- Djamé Seddah was a member of the PhD defense committee of Anthony Sigogne (University Paris-Est Marne-la-Vallée, Nov. 2012). The title was "Intégration de ressources lexicales riches dans un analyseur syntaxique probabiliste".
- Djamé Seddah was a member of the a research fellow hiring committee at the University of Copenhagen (Denmark). Position funded by the Andeers Sogaard's ERC young researcher grant.
- Djamé Seddah was a member of the "Comité de Sélection" for an Assistant Professor position in Computer Science (CNU 27) at Université Paris Sorbonne.
- Benoît Sagot was a member of the "Comité de Sélection" for an Assistant Professor position in Computer Science (CNU 27) at University Paris-Est Marne-la-Vallée (IUT).

Marie Candito was a member of the "Comité de Sélection" for an Assistant Professor position in Computer Science (CNU 27) at Université Aix-Marseille II.

9.4. Popularization

- Éric de La Clergerie and Mikael Morardo have presented some results about NLP and Knowledge Acquisition during "Les journées de la science" (Oct. 2012).
- Éric de La Clergerie was invited to talk to the Inria Sophia seminar "C@fe-in" and to the CIV (*Valbonne International Center*) about "Les ordinateurs comprennent-ils le langage ?" (*Do computers understand language ?*).

9.5. AERES Evaluation

The UMR-I formed by Alpage was evaluated by AERES on December 4th, 2012.

AOSTE Project-Team

9. Dissemination

9.1. Scientific Animation

Robert de Simone

Technical Program Committee: FDL2012, SIES2012, SSMBSE2012, MEMOCODE2012, ES-Lsyn2012.

Board of Administrators: CIM PACA Design Platform association

Scientific co-animator: DAS SE (Specific Action Domain on Embedded Systems), Aerospace Valley Competitiveness Cluster

Yves Sorel

Technical Program Committee: RTNS 2012, DASIP 2012.

Editorial Board: Traitement du Signal Journal

Steering Committee: OCDS/SYSTEM@TIC Paris-Region Cluster

Frédéric Mallet

Technical Program Committee: ESLsyn2012.

Laurent George

Technical Program Committee: ECRTS 2012, RTAS 2012, WFCS 2012.

Co-editor: special issue of Real-Time Systems Journal made of best papers from RTNS 2011 conference (with Alan Burns, Univ. of York, UK).

Scientific Co-chair: ACTRISS group, supported by GDR ASR (CNRS, France) (<http://www.actriss.org/>).

Julien Deantoni

Technical Program Committee: CIEL2012.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Julien Deantoni, Computer Environnement, 30 h, L2 level, Polytech engineering school of University Nice/Sophia-Antipolis (UNS EPU) France.

Master: Julien Deantoni, Model Driven Engineering, 22 h, M2, UNS EPU.

Master : Julien Deantoni, C++ and Object Oriented Programming, 54 h, M1, UNS EPU.

Master: Julien Deantoni, Embedded Software and systems, 7 h, M2, UNS EPU.

Master: Julien Deantoni, VHDL, 40 h, M1, UNS EPU.

Licence: Sid-Ahmed-Ali Touati, Assembleurs et jeux d'instructions, 52h, L3, UNS Licence info.

Licence: Sid-Ahmed-Ali Touati, Systèmes informatiques, 30h, L1, UNS Licence info.

Master: Sid-Ahmed-Ali Touati, Programmation efficaces pour programmes embarqués et hautes performances, 16h, M1 Master ISI.

Master: Sid-Ahmed-Ali Touati, Systèmes d'exploitation avancés, 39h, M1, UNS Master ISI.

Master: Sid-Ahmed-Ali Touati, Programmation efficace et Optimisation de code, 16h, M1, UNS Master ISI.

Master: Sid-Ahmed-Ali Touati, Architecture des Processeurs, 15h, M1, UNS EPU.

Licence : Frédéric Mallet, Introduction à la Programmation Objet, 45h, L1, UNS.

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.

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.

Master : Robert de Simone, Formal Models for Networks-on-Chip, 24h , M2, UNS.

Master : Robert de Simone, Semantics of Embedded and Distributed Systems, 24 h, M1, 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 Engineering School Paris

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

Master: Dumitru Potop, Programmation synchrone des systèmes temps-réel, 8h, M1, EPITA Engineering School Paris

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

Master: Laurent George, Distributed Real-Time Systems, 24h, M2, UPEC

9.2.2. Supervision

PhD: Mohamed Marouf, *Ordonnancement temps réel dur multiprocesseur tolérant aux fautes appliqué à la robotique mobile*, Ecole des Mines de Paris, defended on June 1st 2012, supervised by Yves Sorel, co-supervised by Brigitte D'Andrea-Novel (Institut Mines-Telecom).

PhD in progress: Carlos Ernesto Gomez-Cardenas, *Environnement multi-vues pour la métamodélisation sémantique formelle de systèmes embarqués*, UNS, started September 2010, supervised by Frédéric Mallet.

PhD in progress: Matias Vara-Larsen, *Toward a formal and hierarchical timed model for concurrent heterogeneous model*, ANR/CNRS, 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: Falou Ndoeye, *Multiprocessor real-time scheduling taking into account preemption cost*, started January 2011, supervised by Yves Sorel.

PhD in progress: Manel Djemal, *Distributed real-time scheduling onto NoC architectures*, EDITE/UPMC, started Nov. 2010, co-supervised by Alix Munier (UPMC/Lip6) and D. Potop-Butucaru.

PhD in progress: Thomas Carle, *Real-time implementation of embedded control applications with conditional control onto time-triggered architectures*, EDITE/UPMC, started Sep. 2011, supervised by D. Potop-Butucaru.

PhD in progress: Pierre Courbin (ECE/UPEC), *Ordonnancement temps réel parallèle multiprocesseur*, started September 2009, supervised by Laurent George.

PhD in progress: Philippe Thierry (CIFRE Thales/UPEC), *Ordonnancement temps réel multiprocesseur sous contraintes de sécurité*, started April 2010, supervised by Laurent George.

PhD in progress: Vincent Sciandra, (CIFRE Veolia/UPEC), *Ordonnancement temps réel à criticité mixte dans les systèmes de transports intelligents (ITS)*, started Oct. 2010, supervised by Laurent George.

PhD in progress: Manar Qamhieh, (UPEMLV), *Ordonnancement temps réel de graphes de tâches parallèles à criticité mixte*, started Sept. 2010, co-supervised by Serge Midonnet (UPEMLV) and Laurent George.

PhD: Abdelhafid Mazouz, *An Empirical Study of Program Performance of OpenMP Applications on Multicore Platforms*, defended December 11 2012, UVSQ, supervised by Sid Touati (as part of his activities prior to joining Aoste), co-supervised by D. Bartou (LABRI).

9.2.3. Juries

Robert de Simone

PhD reviewer: Sébastien Guillet (Université Bretagne-Sud), Cédric Auger (Université Orsay Paris-Sud),

HDR examiner: Ludovic Apvrille (Institut Mines-Telecom) (President of Jury).

Frédéric Mallet

PhD reviewer: Boutheina Bannour (Ecole Centrale Paris), Daniel Knorreck (Télécom ParisTech), Michel Lauer (INP Toulouse), Sabir Idrees (Télécom ParisTech)

PhD examiner: Cyril Faucher (Université de La Rochelle)

Sid Touati

PhD reviewer: Mohamed Benazouz (U. Paris 6), Jingyan Jourdan-Lu (ENS Lyon), Jean-Noël Quintin (INP Grenoble)

PhD examiner: Julien Jaegger (UVSQ)

Laurent George

PhD reviewer: Aurélien Monot (Université de Lorraine, Nancy)

Yves Sorel

PhD examiner: Mohamed Benazouz (University Pierre et Marie Curie)

Julien Deantoni

PhD examiner: Abderraouf Benyahia (Supelec)

ARLES Project-Team

8. Dissemination

8.1. Scientific Animation

8.1.1. Programme Committees of Conferences and Workshops

- Nelly Bencomo is PC member of the following international conferences: SEAMS '12& '13, MODELS '12& '13, CIbSE '12& '13, Poster track at RE '12& '13, SANES session at PECCS '13, SBES '13;
- Nelly Bencomo is PC member of the following international workshops: UsARE '12 at ICSE '12, VAMOS '13;
- Nikolaos Georgantas is PC member of the following international conferences: DAIS '12, ICSOFT '12, DATA '12, SOSE '13, ANT '13;
- Nikolaos Georgantas is PC member of the following international workshops: MW4NG'12, ARM'12;
- Valérie Issarny is PC member of the following international conferences: ESSOS '12, FASE '13, ICDCS '13, ICSE-NIER '12, ICSE '13, IFIPTM '13, ISARCS '13, Middleware '12, SEAMS '12& '13;
- Valérie Issarny is PC member of the following international workshops: SESO@ICSE '13, SERENE' 12& '13;
- Animesh Pathak is PC member of the following international conferences: ICCS '12, iThings '12, NPC '12, SENSORNETS '12, S-Cube '12; and
- Animesh Pathak is PC member of the following international workshops: SESENA '12, WSN4ITS '12, GeoHCI '13, and the Middleware '12 doctoral symposium.

8.1.2. Leadership Services in Academic Events and Edited Journals

- Nelly Bencomo is Student Volunteers Co-Chair at ICSE 2012;
- Nikolaos Georgantas is associate editor of the International Journal of Ambient Computing and Intelligence (IJACI);
- Nikolaos Georgantas is associate editor of the international journal Conference Papers in Computer Science;
- Valérie Issarny is member of the Steering Committee of the Middleware and ESEC/FSE conferences;
- Valérie Issarny is associate editor of the Springer JISA Journal of Internet Services and Applications;
- Valérie Issarny is the general chair of the ESSoS 2013 International Symposium on Engineering Secure Software and Systems; and
- Animesh Pathak is the Production Chair of HiPC 2012 & 2013.

8.1.3. Other Academic Services

- Nikolaos Georgantas is member of the PhD monitoring committee at Inria Paris-Rocquencourt;
- Valérie Issarny acted as Paris Node director of the EIT ICT Labs KIC from January to September 2012;
- Valérie Issarny is coordinator of the EC FP7 FET IP CONNECT;
- Valérie Issarny is scientific leader of the EC FP7 IP CHOReOS;

- Valérie Issarny is expert for the EC FP7 ICT work programme, and ARTEMIS Joint Undertaking;
- Valérie Issarny is member of the INRETS scientific council (IFSTTAR since 2011) & “Commission d’évaluation des chercheurs”;
- Valérie Issary is member of the GDR GPL scientific council;
- Valérie Issarny is member of the evaluation committee of ANR BlancJCJC’12, of Swedish Research Council subcommittee for Computer Science’2012 and Vienna Science and Technology Fund’2012; and
- Animesh Pathak is member of review board for EIT ICT labs 2013 call, Smart Spaces, and Cyber-Physical Systems tracks.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Valérie Issarny gives a 12 hours lecture on “Pervasive Service Oriented Computing” as part of the SWAS lecture of the Master 2 COSY of the University of Versailles Saint-Quentin en Yvelines;

Animesh Pathak co-taught a M2 level course on “Web sémantique, contenus et usages” at University of Versailles Saint-Quentin-en-Yvelines in Spring 2012; and

Animesh Pathak gave two three-hour guest lectures at CNAM, Paris as part of a M2 level course.

8.2.2. Supervision

In 2012, the following student successfully defended his PhD: Nebil Ben Mabrouk, “*QoS Service Oriented Middleware for Pervasive environments*”, defended April 2012, advised by Nikolaos Georgantas and Valérie Issarny

Additionally, the following PhD theses are currently in progress at the ARLES project-team:

- Emil Andriescu, “*Synthèse et déploiement dynamiques de protocoles de médiation pour l’interopérabilité dans les environnements collaboratifs nomades*”, started October 2012, advised by Valérie Issarny
- Dionysis Athanasopoulos, “*Evolution and Maintenance in Service-oriented Software*”, started October 2008, advised by Apostolos Zarras and Valérie Issarny
- Amel Bennaceur, “*Synthèse dynamique de connecteurs pour les réseaux ubiquitaires*”, started October 2009, advised by Valérie Issarny
- Benjamin Billet, “*Self-adaptive Streaming Middleware for the Internet of Things*”, started October 2012, advised by Valérie Issarny
- Sara Hachem, “*Middleware pour l’Internet des objets intelligents*”, started October 2012, advised by Animesh Pathak and Valérie Issarny
- Pankesh Patel, “*Enabling High-Level Application Development in Sensing-and-Actuation-augmented Pervasive Systems*”, started October 2010, advised by Animesh Pathak and Valérie Issarny

8.2.3. Juries

Valérie Issarny served on the PhD jury of two students: Ahmed Gater (May 2012, UVSQ), and Ajay Kattapur (November 2012, U. Rennes I)

AXIS Project-Team

7. Dissemination

7.1. Animation of the Scientific Community

7.1.1. General Audience

- **B. Senach' talk at WUD 2012 [68]:** "Experience is a back hooked lantern that shed light on the travelled path". Current and future research topics are better understood when envisioned within the global framework of societal demands and in relation with historical evolution. For the 2012 World Usability Day event, an overview of the last 40 years research topics in SHS-STIC has been proposed. This presentation showed first how current scientific studies of user experience are linked to a paradigm shift in the 90s' concerning the initially too simplistic relationship between SHS and STIC. From this conceptual crisis emerged in each field (SHS and STIC) specific research tracks and an enlarged model of Human behavior including, among others, social relationships, shared activities, emotions, etc. As expertise in user interface design and evaluation improved in relation with technical development, new societal challenge araised with new methodological requirements.

First the European community turn towards knowledge economy put stress on open innovation and living lab methodology as a way to accelerate new products and services adoption. Ethno methodology nowadays is more and more used and the field of Service Design has emerged as a domain integrating most of tools and methods previously used for user interface and user experience design.

In addition, the European Community orientation towards sustainable development brought other requirements concerning deep change of the way of living in occidental society. As it is necessary to adopt eco behavior for resources consumption, mobility and others daily activities, the focus is now on levers helping people to change their behavior. Persuasive interface are a promising research aera. The B. Senach' video presentation at WUD2012 is also available on line on dailymotion.

- **TIC TAC:** co-organisation of the final event (may, large audience) related to the PREDIT Tic Tac at ADEME (Sophia Antipolis) in order to report the results of the project and announce the five citizen, winners of the experiment. Around 40 people participated to this event.
- **ECOFAMILIES:** co-organisation of the final event (large audience) at CSTB (Sophia Antipolis) related to the PACALABS ECOFAMILIES project (cf. section 6.1.4 and the final report [61]. A documentary film has been produced during the project by Natacha Cyrulnik (I3M) and the « Compagnie des Embruns »: this movie offers a testimonial of the participatory design process and shows the families implication all along the project. This project was also the subject of 19-20 journal at France 3 on October 17th. An article on the ECOFAMILIES project - how to promote energy-aware behaviors at home was published on BuildUP and is shared in various social networks (LinkedIn, twitter, facebook).An executive summary of the project (english version) was put on the ICT Usage Lab Web site.
- **ECOFFICES:**
 - B. Trousse gave a talk on *Ecoffices: the usages aspect* (April 19th, Brignoles) in the context of the working group Smart grid in PACA (common to two clusters, SCS and Cap Energies clusters).
 - Co-redaction of a flyer (english version) related to the PACALABS ECOFFICES project for the experts of IGSAN during the conferences in Nice distributed by “Chambre de Commerce et industrie” (Enterprise/Environment/Energy Department) ISGAN - CCI.

7.1.2. Editorial Boards and Reviewing

Axis members participate in the **editorial boards** of various journals:

Brigitte Trousse

- Journal of Symbolic Data Analysis
- IJDST - International Journal of Design Sciences & Technology)
- Co-Design Journal

Yves Lechevallier

- MODULAD (electronic journal), <http://www.modulad.fr/> as co-editor
- Journal of Symbolic Data Analysis

Dominique Scapin

- BIT (Behaviour & Information Technology) as Associate Editor
- UAIS -International Journal of Universal Access in the Information Society)
- IJHCS - International Journal of Human-Computer Studies
- IWC - Interacting with Computers
- IJPOP - International Journal of People-Oriented Programming
- International Journal On Advances in Intelligent Systems
- JMUI - Journal of Mutimodal User Interfaces
- JIPS - Journal d'Interaction Personne-Système

AxIS members are very regularly **reviewers** for various major journals: ADAC "Advances in Data Analysis and Classification", BIT, ADAC "Advances in Data Analysis and Classification", IJHCS (International Journal of Human-Computer Studies), JMUI (Journal of Multimodal User Interfaces), Le Travail Humain, UAIS, IWC in 2012.

Thierry Despeyroux was reviewer for a book: Advances in Knowledge Discovery and Management Vol. 4 to be published.

D.L. Scapin participated to the content setting and wrote a "Foreword" for the compilation of ergonomic standards by AFNOR: Ergonomie des Logiciels. Recueil de Normes Ergonomie des postes et lieux de travail, AFNOR November 2012.

7.1.3. Conferences/Workshops Scientific Program Committees

Y. Lechevallier and B. Trousse are members of the **supervising committee** of the association EGC (<http://www.egc.asso.fr/>)

Yves Lechevallier was scientific chair of EGC 2012 [39], Bordeaux, France, January 31 - February 3, 2012

AxIS permanent members are involved in the following program committees of conferences and workshops:

Brigitte Trousse

- CSCWD 2012, the 2012 16th IEEE International Conference on Computer Supported Cooperative Work in Desig, Wuhan, China , 23-25 may, (sponsored by IEEE SMC Society)
- EGC 2012, Bordeaux, France, January 31 - February 3, 2012
- RàPC 2012, 20th French Workshop on Case-based Reasoning, 25 june, Paris.

Yves Lechevallier

- EGC 2012, Bordeaux, France, January 31 - February 3, 2012

Dominique Scapin

- ACHI 2012, Valencia, Spain, January 30 - February 4, 2012
- ICMI 2012, Santa Monica, California. Oct. 22-26th, 2012
- Workshop "Supportive User Interfaces", Copenhagen, Denmark - June 25, 2012, in conjunction with the EICS 2012 conference
- CENTRIC 2012, Lisbon, Portugal, November 18-23, 2012
- SETIT 2012, Sousse, Tunisia, March 21-24, 2012
- ErgoIHM 2012, Biarritz, France, October 17-19,2012

7.1.4. Organization of Workshops and Conferences

- **Yves Lechevallier** was scientific chair of EGC 2012, Bordeaux, France, January 31 - February 3 [39].
- **B. Trousse** (as Inria and ICT Usage Lab representative) participated in the ICC 2012 program committee in charge of the invited talks. Our two proposed speakers were selected for the final program (June 7th): Michael Nilsson coordinator of the Fireball project (CDT, Luleå University of Technology) and Khaldoun El Agha (University Paris 8 and ICT labs).

7.1.5. Participation in PhD Thesis Committees

AXIS researchers were members of the following Ph.D. committees in 2012:

- **Julie Seguela**, Ph.D.: Fouille de données textuelles et systèmes de recommandation appliqués aux offres d'emploi diffusées sur le web. CNAM, école doctorale EDITE, May 3, 2012: Y. Lechevallier (Examineur).
- **Jean-Baptiste Masson**, Ph.D.: SIGFRIED 2 : Modèles de mélange censurés et autres méthodes statistiques pour la construction d'indicateurs spatialisables de la qualité de l'air intérieur dans les logements français. Université de Technologie de Compiègne, May 30, 2012: Y. Lechevallier (Rapporteur).
- **Annette Casagrande**, Ph.D.: Proposition d'une mesure de voisinage entre textes: Application à la veille stratégique. Université de Grenoble, école doctorale MSTII, July 3, 2012: Y. Lechevallier (Examineur).
- **Thomas Villaren**, Ph.D.: « Modèles et mécanismes d'adaptation d'Interaction Homme-Machine aux changements de contexte », Université de Bretagne, Département : Logique des Usages, Sciences Sociales et de l'Information (LUSSI), spécialité « STIC », November 30, 2012: D. L. Scapin (Rapporteur).
- **Jacques-Henri Sublemontier**, Ph.D.: Classification non supervisée : de la multiplicité des données à la multiplicité des analyses. Université d'Orléans, December 7, 2012: Y. Lechevallier (Rapporteur).
- **Djamal Abdoul Nasser Seck**, Ph.D.: Arbres de décision symboliques, outils de validation et d'aide à l'interprétation. Université Paris-IX Dauphine, December 20, 2012: Y. Lechevallier (Rapporteur).

7.2. Teaching and Supervision

7.2.1. Teaching Activities

Y. Lechevallier

Master 2 Recherche *Systemes intelligents* (resp: S. Pinson), University at Paris IX-Dauphine, France. Course on "Du data mining au knowledge mining" (12h).

Master 2 Pro *Ingénierie de la Statistique* (resp: G. Saporta) at CNAM (Conservatoire national des arts et métiers), France. Course on "Méthodes neuronales" (12h).

Ecole Nationale des Sciences Géographiques (ENSG): Course on Clustering (12h).

7.2.2. PhD Thesis Supervision

AXIS is an associated team of the STIC Doctoral school of Nice-Sophia Antipolis University (UNS). Our PhD students come from the University of Paris Dauphine, the University of Nice Sophia Antipolis, the Université Catholique de Louvain, the University of Recife (Brazil) and from various Universities of Morocco and of Tunisia.

B. Trousse is involved in the supervision committee of E.L. Moukhtar Zemmouri, PhD student in Morocco.

BANG Project-Team

8. Dissemination

8.1. Scientific Animation

B. Perthame is editor in various journals (CALCOLO, CPDE, DCDS(B), Mathematical Medicine and Biology).

D.Drasdo is in the editorial board of TheScientificWorldJOURNAL and ISRN Biophysics. He is member of the leadership team of the large scale grant project Virtual Liver Network (VLN).

B. Perthame represents Inria at the expert group of the Aviesan Institute “Molecular and structural bases of the living” (ITMO Bases moléculaires et structurales du vivant, head Thierry Meinell).

J. Clairambault represents Inria at the expert group of the Aviesan Cancer Institute (ITMO Cancer, head Fabien Calvo) and is also a member of the “Conseil des Partenaires de l’IUC” (Institut Universitaire de Cancérologie, UPMC, founded November 2012) as (nominated) representative of UPMC.

Luís Almeida was in 2012 a member of the Scientific Advisory Board of CIRB (Centre of Interdisciplinary Research in Biology), Collège de France (UMR CNRS 7241/ INSERM U1050).

8.2. Teaching - Supervision

8.2.1. Teaching

Master: Jean Clairambault, (1) M2 pharmacologie Rennes (cours magistral, 4h/an) et (2) ED Innovation thérapeutique, Université Paris-Sud (cours magistral, 2 h/an): “Modélisation chronothérapeutique du schéma d’administration”; (3) M2 Paris-Descartes “Croissance tissulaire” (2012, cours magistral, 1 h 30)

Master: Marie Doumic-Jauffret, Méthode des Éléments Finis, M1 ENSTA, Paris: 12 h (TD, professeur en cours magistral: P. Ciarlet et S. Fliss)

Master: Dirk Drasdo, M2, Mathematical Biology, UPMC: “Agent-based models of tissue organisation”: 24h

Master: Jonathan Touboul, Master Science of Complex Systems (Erasmus Mundus, Ecole Polytechnique, U. Chalmers, Warwick and Gothenburg), M2, 40h, cours magistral “Stochastic Calculus and Limit Theorems”

International schools: Dirk Drasdo, (1) Evry 2012 Thematic Research School “Modelling complex biological systems in the context of genomics” (1.5hrs); (2) DPG - Physics School “Forces and Flow in Biological Systems” (1.5hrs)

8.2.2. Supervision

HdR: Luís Lopes Neves de Almeida, “Quelques problèmes liés à l’étude d’équations aux dérivées partielles issues de la physique, de la géométrie et de la biologie”, UPMC, April 2012

PhD: Chadha Chettaoui, “Physical-Based Modelling and Analysis of Animal Tissue Growth and Morphogenesis”, ENS Paris, July 2012, Supervisors Dirk Drasdo, Juhui WANG (Unité MIA, INRA, Jouy-en-Josas) and, Isabelle HUE (INRA/ENV Alfort/CNRS)

PhD: Luna Dimitrio, “Modelling nucleocytoplasmic transport with application to the intracellular dynamics of the tumour suppressor protein p53” [1], UPMC, September 2012, Supervisors Jean Clairambault and Roberto Natalini (University Sapienza, Rome)

PhD: Nick Jagiella, “Parameterisation of Lattice-Based Tumor Models from Data”, UPMC, September 2012. Supervisors Dirk Drasdo, Benoît Perthame, and Irène Vignon-Clémentel (REO)

PhD: William Weens, “Mathematical Modeling of Liver Tumor”, UPMC, September 2012. Supervisor Dirk Drasdo

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

PhD in progress: Anne-Céline Boulanger, supervision by Marie-Odile Bristeau and Jacques Sainte-Marie

PhD in progress: Youssef Bourfia, UPMC (since September 2011), supervision by Jean Clairambault, Mostafa Adimy (Dracula team, Lyon) and Hassan Hbid (UCAD, Marrakech)

PhD in progress: Géraldine Cellière, UPMC (since October 2011), supervision by Dirk Drasdo, Andrei Zinovyev and Emmanuel Barillot (Institut Curie)

PhD in progress: Ján Eliaš, UPMC (since September 2012), supervision by Jean Clairambault and Benoît Perthame

PhD in progress: Casimir Emako-Cazianou, UPMC (since December 2012), supervision by Luís Almeida and Nicolas Vauchelet

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

PhD in progress: Luís Carlos García del Molino, “Heterogeneous networks and their dynamics”, supervision by J. Touboul and K. Pakdaman

PhD in progress: Hadjer Wafaâ Haffaf, UPMC (since September 2011), supervision by Marie Doumic-Jauffret

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

PhD in progress: Cristóbal Quininao, “McKean Vlasov equations and neurosciences”, supervision by J. Touboul and S. Mischler

PhD in progress: Justine Scher, “Growth-Fragmentation equations in neurosciences”, supervision by J. Touboul and S. Mischler

PhD in progress: Karina Vilches, (since sept. 2010), supervision by C. Conca and B. Perthame

M2: Alban Lévi, “Complexity of Random Neural Networks”, ENS Cachan et Collège de France, April-August 2012, supervision by G. Wainrib and J. Touboul

M1: Quan Shi, “Self-Organized criticality in random neural networks”, École Polytechnique et Collège de France, April-August 2012, supervision by J. Touboul

M1: Flavio de Souza Serra de Pinho Cabeca, “Collective Oscillations in excitable networks”, École Polytechnique et Collège de France, April-August 2012, supervision by J. Touboul

8.3. Popularisation

Participation in the “Fête de la science” at Inria-Rocquencourt (October 2011) involving F. Billy, J. Clairambault, V. Roche (Villejuif), in a joint Inria-INSERM booth dedicated to chronotherapy: presentation of a movie and of a video game, both designed by Annabelle Ballesta, and of 2 posters by A. Ballesta and by F. Billy.

J. Clairambault has written a short “Perspective in Mathematical Biology”: “Can theorems help treat cancer?” in the Journal of Mathematical Biology [17], contributed by the European Society for Mathematical and Theoretical Biology.

D. Drasdo gave a general presentation on multiscale tissue modelling in the “2e Forum international de Prospective de Recherche et Traitement pour le cancer” in September 2012.

J. Touboul has written a chapter: “A mathematician’s view of simplicity in the brain” in the book by A. Berthoz, “Simplicity”, to be published by Editions Odile Jacob, Paris.

CAD Team

9. Dissemination

9.1. Teaching - Supervision - Juries

9.1.1. Teaching

Pr. Jean-Claude Paul, Pr. Jun-Hai Yong, Dr. Bin Wang and Dr. Hui Zhang teach at Tsinghua University. Dr. Hui Zhang is the Dean of the School of Software Teaching Program.

Master : Pr. Xiaopeng Zhang and Dr. Weiming Dong teach at Graduate University of Chinese Academy of Sciences.

CASCADE Project-Team

7. Dissemination

7.1. Editorial Boards

Editor-in-Chief

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

Associate Editor-in-Chief

- of *Theory of Computing (ToC)*: Oded Regev

Associate Editor

- of *Security and Communication Networks*: David Naccache
- of *Journal of Cryptographic Design*: David Naccache
- of *Encyclopedia of Cryptography and Security*: David Naccache
- of *Journal of Small Scale Digital Device Forensics (publication currently on hold for financial reasons)*: David Naccache
- of *Cryptologia* – Taylor & Francis: David Naccache
- of *Information Processing Letters* – Elsevier: David Pointcheval
- of *IEEE Transactions on Information Forensics and Security*: Michel Abdalla

Columnist (in charge of the bi-monthly CryptoCorner)

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

7.2. Program Committees

- RIVF – February 2012, Ho Chi Minh, Vietnam: David Naccache, Duong Hieu Phan
- TCC – March 2012, Taormina, Italy: Vadim Lyubashevsky
- EUROCRYPT – April 2012, Cambridge, UK: David Pointcheval (Program Chair)
- Pairing – May 2012, Cologne, Germany: Michel Abdalla (Program Chair), Damien Vergnaud
- STOC – May 2012, New York, NY, USA: Oded Regev
- AICT – May 2012, Stuttgart: David Naccache
- COSADE – May 2012, Darmstadt, Germany: David Naccache
- NTMS – May 2012, Istanbul, Turkey: David Naccache
- PKC – May, 2012, Darmstadt, Germany: Michel Abdalla, Vadim Lyubashevsky
- ACNS – June 2012, Singapore: Michel Abdalla
- HOST – June 2012, San Francisco, CA, USA: David Naccache
- ACISP – July 2012, Wollongong, Australia: Michel Abdalla
- Africacrypt – July 2012, Ifrane, Morocco: David Naccache
- ISCC – July 2012, Cappadocia, Turkey: David Naccache
- Secrypt – July 2012, Roma, Italy: David Naccache
- AReS – August 2012, Prague: David Naccache
- YACC – September 2012, Porquerolles, France: Michel Abdalla, Damien Vergnaud
- ProvSec – September 2012, Chengdu, China: Michel Abdalla, David Naccache

- ESORICS – September 2012, Pisa Italy: David Naccache
- Latincrypt – October 2012, Santiago, Chile: Michel Abdalla, Vadim Lyubashevsky
- IWSEC – November 2012, Fukuoka, Japan: Damien Vergnaud
- CARDIS – November 2012, Graz, Austria: David Naccache
- Intrust – December 2012, Egham, UK: David Naccache
- Indocrypt – December 2012, Kolkata, India: David Naccache
- CANS – December 2012, Darmstadt, Germany: Michel Abdalla

7.3. Teaching - Supervision - Juries

7.3.1. Teaching

Licence: David Naccache, Introduction to computer science, L1, Univ. Paris II

Licence: Maribel Fernandez, Formal languages, computability and complexity, ENS

Master: David Naccache, Scientific programming through practice, M1, ENS

Master: David Naccache, Jacques Stern, Damien Vergnaud, Introduction to Cryptology, M1, ENS

Master: Michel Abdalla, Vadim Lyubashevsky, Cryptography, M2, MPRI

Master: David Naccache, Computer Security, M2, Univ. Paris II

Master: David Naccache, Risk Management, M2, Univ. Paris II

Master: David Naccache, Computer forensics, M2, Univ. Paris II

Master: Duong-Hieu Phan, Provable Security, M2, Univ. Paris VIII

Master: David Pointcheval, Cryptography, M2, ESIEA

7.3.2. Supervision

PhD : Delphine Masgana Leresteux, *Injection de fautes et de logiciels sur les implémentations cryptographiques* Université Paris VII, 5 jul. 2012, Pierre-Alain Fouque

PhD : Olivier Blazy, *Preuves de connaissances interactives et non-interactives*, Université Paris VII, 27 sept. 2012, David Pointcheval

PhD : Roch Lescuyer, *Outils cryptographiques pour les accréditations anonymes*, Université Paris VII, 21 nov. 2012, David Pointcheval

PhD in progress: Mario Strefler, *Diffusion chiffrée*, 2009, David Pointcheval

PhD in progress: Viet Cuong Trinh, *Traçage de traîtres et diffusion de données chiffrée*, 2009, Duong Hieu Phan

PhD in progress: Léo Ducas, *La cryptographie à base de réseaux*, 2009, Phong Nguyen

PhD in progress: Aurore Guillevic, *Étude de l'arithmétique des couplages sur des courbes algébriques pour la cryptographie*, 2010, Damien Vergnaud

PhD in progress: Diana Maimut, *Chiffrement pleinement homomorphe*, 2011, David Naccache

PhD in progress: Eric Freyssinet, *Modélisation de Botnets*, 2011, David Naccache

PhD in progress: Tancrède Lepoint, *La cryptographie à base de réseaux*, 2011, Vadim Lyubashevsky

PhD in progress: Sylvain Ruhault, *L'aléa en cryptographie*, 2011, David Pointcheval & Damien Vergnaud

PhD in progress: Fabrice Ben Hamouda, *La fuite d'information en cryptographie*, 2012, Michel Abdalla & David Pointcheval

PhD in progress: Thomas Prest, *La cryptographie à base de réseaux*, 2012, Vadim Lyubashevsky & David Pointcheval

PhD in progress: Olivier Sanders, Externalisation de calculs cryptographiques, 2012, David Pointcheval

7.3.3. Juries

- HdR: Karthikeyan Bhargavan, *Towards the Automated Verification of Cryptographic Protocol Implementations*, Ecole Normale Supérieure, 4 may 2012: David Pointcheval
- HdR: Carlos Aguilar Melchor, *Sécurité, protection de la vie privée et cryptographie : quelques contributions*, Univ. Limoges, 26 jun. 2012: David Pointcheval (chair)
- HdR: Pascal Lafourcade, *Computer Aided Security for Cryptographic Primitives, Voting protocols, and Wireless Sensor Networks*, Univ. Grenoble, 6 nov. 2012: David Pointcheval (chair)
- PhD: Marion Daubignard, *Formal Methods for Concrete Security Proofs*, Univ. Grenoble, 12 jan. 2012: David Pointcheval (reviewer)
- PhD: Saeed Sedghi, *Towards Provably Secure Efficiently Searchable Encryption*, Univ. Twente, 17 feb. 2012: Michel Abdalla
- PhD: Avradip Mandal, *Provable Security and Indifferentiability* Univ. Luxembourg, 25 jun. 2012: David Pointcheval
- PhD: Delphine Masgana Leresteux, *Injection de fautes et de logiciels sur les implémentations cryptographiques*, Univ. Paris VII, 5 jul. 2012: David Pointcheval (co-advisor), David Naccache (chair)
- PhD: Adriana Suarez Corona, *Compilers and protocols for key establishment*, Univ. Oviedo, 24 jul. 2012: Michel Abdalla (Examiner)
- PhD: Olivier Blazy, *Preuves de connaissances interactives et non-interactives*, Univ. Paris VII, 27 sept. 2012: David Pointcheval (advisor), Michel Abdalla, Damien Vergnaud
- PhD: Anja Becker *La technique de représentation – Application à des problèmes difficiles en cryptographie* UVSQ, 26 oct. 2012: David Naccache (chair)
- PhD: Roch Lescuyer, *Outils cryptographiques pour les accréditations anonymes*, Univ. Paris VII, 21 nov. 2012: David Pointcheval (advisor), David Naccache (chair), Damien Vergnaud
- HdR: Bruno Robisson *Contribution à la sécurisation des composants vis-à-vis des attaques physiques* UMPC, 12 dec. 2012: David Naccache
- HdR: Olivier Ly *Un parcours de recherche des méthodes formelles aux robots humanoïdes* Univ. Bordeaux, 13 dec. 2012: David Naccache (reviewer)
- PhD: Amar Siad, *Protocoles de génération des clés pour le chiffrement basé sur de l'identité*, Univ. Paris 8, 17 dec. 2012: David Pointcheval, Duong-Hieu Phan
- PhD: Housseem Maghrebi *Masking Countermeasures against Higher-Order Side Channel Attacks: Security Evaluation and Enhancement by Specific Mask Encodings*, Telecom ParisTech, 21 dec. 2012: David Naccache
- HdR: Sylvain Guilley *Protection des Accélérateurs Matériels de Cryptographie Symétrique* TelecomParisTech, 20 dec. 2012: David Naccache

7.4. Invited Talks

7.4.1. At Conferences

- PKC 2012, Darmstadt, Germany (May): David Pointcheval
- NTCCS 2012, Oujda, Morocco (Avril): Damien Vergnaud
- LSFA 2012, Rio de Janeiro, Brazil (September): Maribel Fernandez
- ECC 2012, Queretaro, Mexico (October): Sorina Ionica
- ICCV 2012 Distinguished Lecturer, Paris (November): David Naccache

- ICISC 2012, Seoul Korea, (November): David Naccache
- CARDIS 2012, Graz (November): David Naccache
- SantaCrypt 2012, Prague (November): David Naccache

7.4.2. At Organized Schools

- Bar-Ilan Winter School on Cryptography. Ramat-Gan, Israel. February, 2012 : Vadim Lyubashevsky
- ECRYPT II Summer School on Lattices. Porto, Portugal. October, 2012 : Vadim Lyubashevsky

7.5. Scientific Animation

7.5.1. Organisation of Events

- ECRYPT II Summer School on Lattices, October 1 - 5, Porto Portugal: Michel Abdalla and Vadim Lyubashevsky
- a weekly seminar is organized: <http://www.di.ens.fr/CryptoSeminaire.html>

7.5.2. 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

7.5.3. Board of International Organizations

- Board of the *International Association for Cryptologic Research* (IACR): David Naccache (2010 – 2012), David Pointcheval (2008–2013)
- Scientific Board of the *Electronic Colloquium on Computational Complexity* (ECCC): Oded Regev

7.5.4. French Research Community

- Recruitment committee at Université Paris VII (PR 27): David Pointcheval
- Recruitment committee at Université of Lyon (PR 27): David Pointcheval
- Recruitment committee at Université de Caen (MC 25): Damien Vergnaud
- Recruitment committee at Université de Montpellier (MC 27): Damien Vergnaud
- Appointed member of the *Conseil National des Universités* (CNU): Damien Vergnaud

CLASSIC Project-Team

8. Dissemination

8.1. Scientific Animation

8.1.1. Conference organization

Gilles Stoltz was the co-chair of the program committee of the 23rd International Conference on Algorithmic Learning Theory (ALT'12); see the edited volume [26]. He was also a member of the program committee of the 25th Conference on Learning Theory (COLT'12).

8.1.2. Organization of seminars

We (co-)organized the following seminars:

- Statistical machine learning in Paris – SMILE (G rard Biau, Gilles Stoltz; see <http://sites.google.com/site/smileinparis/>);
- Parisian seminar of statistics at IHP (Vincent Rivoirard; see <https://sites.google.com/site/semstats>).

8.1.3. Editorial activities, reports written on articles

G rard Biau serves as an Associate Editor for the journals *Annales de l'ISUP*, *ESAIM: Probability and Statistics* and *International Statistical Review*.

Olivier Catoni has been a member of the editorial committee of the joint series of monographs "Math matiques et Applications" between Springer and SMAI until June 2012.

All permanent members of the team reviewed several journal papers during the year.

8.1.4. Participation to national or local evaluation or recruitment committees, to scientific societies

Vincent Rivoirard is a member of the Board of SFdS.

G rard Biau was elected a member of the national board of French universities (CNU) within the applied mathematics section (number 26).

Olivier Catoni is a member of the doctoral commission in mathematics of University Pierre et Marie Curie.

All permanent members of the team participated in several recruitment committees for assistants or full professors in universities.

8.1.5. Honors and distinctions

G rard Biau was elected a member of the Institut Universitaire de France (IUF).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence : Vincent Rivoirard, Statistiques, 39h, niveau L2, Universit  Paris-Dauphine, France

Licence : Olivier Catoni et Gilles Stoltz, Apprentissage, 20h, niveau L3, Ecole normale sup rieure, France

Licence : G rard Biau, Th orie des probabilit s, 40h, niveau L3, ISUP – Universit  Pierre et Marie Curie, France

Licence : Gilles Stoltz, Statistiques pour citoyens d'aujourd'hui et managers de demain, 40h, niveau L3, HEC Paris, France

Master : Gérard Biau, Statistique mathématique, 30h, niveau M1, Ecole normale supérieure, France

Master : Vincent Rivoirard, Statistique non-paramétrique, 8h, niveau M1, Ecole normale supérieure, France

Master : Vincent Rivoirard, Statistique non-paramétrique, 35h, niveau M1, Université Paris-Dauphine, France

Master : Vincent Rivoirard, Classification et statistique en grandes dimensions, 18h, niveau M2, Université Paris-Sud, France

Master : Gilles Stoltz, Statistiques et théorie de l'information, 10h, niveau M2, Université Paris-Sud, France

Master : Vincent Rivoirard, Méthodes pour les modèles de régression, 21h, niveau M2, Université Paris-Dauphine, France

Master : Vincent Rivoirard, Statistique bayésienne non-paramétrique, 21h, niveau M2, Université Paris-Dauphine, France

Master : Gilles Stoltz, Examineur à l'oral de probabilités et statistiques de l'agrégation de mathématiques, France

8.2.2. Supervision

PhD in progress : Thomas Mainguy, Statistical learning in computational linguistics, since September 2010, supervised by Olivier Catoni

PhD in progress : Emilien Joly, Phase transition of optimal risk and detection of contamination, since September 2011, supervised by Gábor Lugosi and co-supervised by Gilles Stoltz

PhD in progress : Pierre Gaillard, Aggregation of specialized predictors for the forecasting of electricity consumption, since September 2011, supervised by Gilles Stoltz

PhD in progress : Ilaria Giulini, Dimension free PAC-Bayes bounds for the Gram matrix and unsupervised clustering on the sphere of a Reproducing Kernel Hilbert space, since September 2012, supervised by Olivier Catoni

PhD in progress : Paul Baudin, Robust aggregation of predictors for the forecasting of air quality, with measures of uncertainties, since October 2012, supervised by Gilles Stoltz and co-supervised by Vivien Mallet

Several other PhD in progress : Gérard Biau and Vincent Rivoirard [co-]supervise[d] several other PhD students who are not members of our project-team (respectively, Benoît Patra, Clément Levrard, Benjamin Guedj, Svetlana Gribkova, Baptiste Gregorutti, Erwan Scornet, Nedjmeddine Allab for Gérard Biau, and Laure Sansonnet for Vincent Rivoirard)

MSc theses: Gilles Stoltz supervised the MSc theses of Charles-Pierre Astolfi (MVA, ENS Cachan) and Paul Baudin (MVA, ENS Cachan)

8.2.3. Juries

Gérard Biau was a reviewer for the following PhD defenses:

Ekaterina Sergienko, Université Toulouse III, November 2012

Christophe Denis, Université Paris Descartes, November 2012

Emmanuel Onzon, Université Paris VI, November 2012

and a jury member of the following PhD defenses:

Mohamed Achibi, Université Paris VI, July 2012

Moïse Jérémie, Université Paris VI, September 2012

Virgile Caron, Université Paris VI, October 2012

Caroline Meynet, Université Paris-Sud, November 2012

Nicolas Jégou, Université Rennes 2, November 2012

Sarah Ouadah, Université Paris VI, December 2012

Sylvain Girard, Ecole Nationale Supérieure des Mines de Paris, December 2012

Vincent Rivoirard was a jury member for the following habilitation defenses:

Wintenberger Olivier, Université Paris Dauphine, November 2012

Céline Vial, Université Claude Bernard Lyon 1, Décembre 2012

Gérard Biau was a reviewer for the following habilitation defense:

Céline Vial, Université Claude Bernard Lyon 1, Décembre 2012

and a jury member of the following habilitation defense:

Fadoua Balabdaoui, Université Paris-Dauphine, May 2012

8.3. Popularization

Gilles Stoltz gave a conference for an audience of students of “classes préparatoires” at Mathematic Park (<http://www.ihp.fr/fr/seminaire/mathpark-programme>).

CLIME Project-Team

9. Dissemination

9.1. Scientific Animation

- Marc Bocquet is co-chair 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 Associate Editor of the Quarterly Journal of the Royal Meteorological Society.
- Marc Bocquet has co-organised the Les Houches international summer school “Advanced data assimilation for geosciences”, Les Houches, 28 May 2012 - 15 June 2012.
- Marc Bocquet has co-organised the 4th “Colloque national d’assimilation de données”, Nice, 17-19 December 2012.
- Isabelle Herlin is member of the Scientific Council of CSFRS (High Council for Strategic Education and Research in France).
- Isabelle Herlin organised sessions on "Analysis of data of different scales and sources for mesoscale environmental models" for the International Congress on Environmental Modeling and Software (IEMSs2012).
- Isabelle Herlin is a member of Evaluation Committee at Inria.
- Isabelle Herlin is a member of the Scientific Council of OSU-EFLUVE.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master OACOS: Marc Bocquet, Vivien Mallet; 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, Victor Winiarek; 12 hours; M2; École des Ponts ParisTech; France.

Master SGE and École des Ponts ParisTech: Vivien Mallet; Air Pollution; 6 hours; M2; École des Ponts ParisTech, Paris 7-Diderot, Paris Est; France.

9.2.2. Supervision

PhD : Mohammad Koohkan, “Modélisation inverse et assimilation de données en qualité de l’air”, University Paris Est, December 20th, 2012, Marc Bocquet.

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 : Karim Drifi, “Reduced models for image assimilation”, University Paris Centre, October 2009, Isabelle Herlin.

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

Yiguo Wang, "Lidar data assimilation", October 2009, Karine Sartelet, Patrick Chazette, Marc Bocquet.

PhD in progress : Victor Winiarek, “Dispersion atmosphérique en milieu urbain et modélisation inverse pour la reconstruction de sources”, University Paris Est, October 2009, Marc Bocquet.

9.2.3. Juries

- Bocquet, M., HdR, Thibaut Montmerle, “Assimilation des données à moyenne échelle pour l’étude des systèmes précipitants”, 27 January 2012, Toulouse, France.
- Bocquet, M. HdR, Olivier Pannekoucke, “Dynamique et modélisation de l’information dans les modèles météorologiques”, 15 November 2012, Toulouse, France.

9.3. Popularization

- Vivien Mallet introduced mathematical modeling for environmental sciences at the award ceremony for Paris mathematical olympiads.
- Anne Tilloy contributed to La Fête de la Science, which is a national initiative for science popularization to which Inria Paris-Rocquencourt took part

CONTRAINTE Project-Team

9. Dissemination

9.1. Scientific Animation

- Grégory Batt has organized an international workshop on Design, optimization and control in systems and synthetic biology at ENS Paris during two days (15 speakers, 230 registered participants, 14 nationalities).

Grégory Batt's invited seminars:

- Summer school Naturel et artificiel: le vivant et ses représentations, Berder, Apr 03, invited talk
- Model-based analysis and control of cellular processes workshop, Purdue, IN, USA, Oct 09, contributed talk
- Perspectives en Biologie de Synthèse, Aviesan/Allenvi workshop, Paris, Dec 11, invited talk

He has been a member of the Program Committee of the JOBIM'12 conference. He was a reviewer for Bioinformatics, IEEE Transactions on Computational Biology and Bioinformatics, and Biosystems.

- François Bertaux was invited to short working visits at the Weiss Lab (MIT, Boston, USA) - March and May/June.
- Xavier Duportet's invited seminar and contributed poster presentations:
 - La Biologie de Synthèse, Bar des Sciences, Paris, April 06, invited talk
 - SynBerc retreat, MIT, USA, October 11, poster

He has been involved in technological transfer activities:

- Provisional patent application: High-throughput discovery of recombinase sites towards the engineering of recombinase specificity
- Gen9 Inaugural G-Prize, 3rd place winner, Cambridge, MA

He is a member of Synthetic Biology Scientific Committee at Alliance pour la recherche et l'innovation des industries de santé (ARIIS), Paris.

- François Fages is a member of
 - Editorial Board of **RAIRO Operations Research**,
 - Steering Committee of the International Conference series on Computational Methods in Systems Biology (CMSB).

He is a member of the Scientific Advisory Boards of

- the Center for Systems Biology at Edinburgh, Scotland,
- the Doctorate School Frontières du Vivant of the University Paris Descartes
- the Laboratoire d'Informatique Fondamentale, University of Orléans.

and a member of the

- "Comité de pilotage" of the OSEO BioIntelligence project, coordinated by Dassault-Systemes

François Fages has co-organized the fourth international workshop on “Bin packing and placement constraints” **BPPC’12** associated to CPAIOR’12 in Nantes, June 2012.

He was member of the program committees of CHR’12, CMSB’12, CS2BIO’12, FHIES’12, ICORES’12, SASB’12 and WCB’12. He has reviewed articles for the following journals: ACM Transactions on Computational Logics, Artificial Intelligence, Constraints, BioMedCentral systems biology, Constraints, PLOS One, Rairo OR.

François Fages was reviewer of research grants for

- the Agence Nationale de la Recherche (ANR),
- the Royal Society (London),
- and the Swiss National Science Foundation (SNSF).

Invited seminars:

- Dagstuhl’s seminar on formal methods for chemical reaction networks, Schloss Dagstuhl, Germany, October 2012.
 - Formal methods in systems biology workshop, associated to CAV’12, Berkeley, USA, July 2012.
 - Symposium Biointelligence, Sophia-Antipolis, July 2012.
 - CP meets CAV workshop, Turunc, Turkey, June 2012.
 - 25 ans du LIFO, Orléans, March 2012.
 - Thierry Martinez acted as a member of the Program Committee of CHR’12.
 - Sylvain Soliman acted as reviewer for CMSB’12 and BMC Systems Biology, as member of the Program Committee of JFPC’12. He was also expert/reviewer for the French PEPS biologie-mathématiques-informatique call (CNRS/INSERM/Inria).
- He gave an invited seminar at Institut Curie’s bioinformatics team. “Reaction Graphs to Regulatory Networks - Theory to practice”.
- Szymon Stoma was invited to short working visits at the Weiss Lab (MIT, Boston, USA) - March and May/June.
 - Denis Thieffry is currently
 - member of the Comité Scientifique Sectoriel of the Department *Biologie et Santé* of the ANR;
 - member of the Comité de Pilotage of the LabEx MemoLife (involving teams from IBEns, Collège de France, and ESPCI);
 - member of the CNRS/INSERM ATIP/Avenir Scientific Committee (young group leader grant scheme);
 - member of the board of the PhD Program Complexity in Post-Genomic Biology of the University of Torino;
 - member of the program committees for ECCB-ISMB, JOBIM, CMSB, and SASB;
 - Editor of BioSystems;
 - Associated Editor of PLoS Computational Biology;
 - Adviser for the PLoS Biology Education series.
 - Jannis Uhlendorf gave an invited seminar at the BioComputing group of the Laboratoire d’Informatique Fondamentale de Lille on Real-time control of gene expression in February 2012.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Contraintes 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 Contraintes:

Summer school Scientific Trends at the Interfaces: Biomathematics - Bioinformatics, Roscoff, Grégory Batt (6h) and François Bertaux (6h).

Master M2 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: Cell Systems Biology master curriculum at the Ecole Normale Supérieure, Paris. Denis Thieffry (coordinator).

Master M2 course C2-35-1 on *Constraint Programming*, Master Parisien de Recherche en Informatique (MPRI) Sylvain Soliman (responsible, 24h) [end of the 2011-2012 academic year].

Master M1 course on *Computational Biology*, Master Approches Interdisciplinaires du Vivant (AIV), Grégory Batt (coordinator, 40h).

Master M1 course on Synthetic Biology, AgroParisTech, Xavier Duportet (12h).

Master M1 course on Synthetic Biology, Faculté de Médecine de Paris, Xavier Duportet (4h).

Licence L2 Cours/TD *Informatique*, Université de Paris Dauphine, Faten Nabli (72h).

Science, Innovation and Entrepreneurship non for profit organization: 4 conferences (400 people), Paris, Xavier Duportet (12h)

9.2.2. Supervision

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

PhD in progress : Xavier Duportet, Université Paris Descartes, Paris, Oct 2010, Dir. Grégory Batt, François Fages and Ron Weiss (MIT)

PhD in progress : Steven Gay, Université Paris Diderot, Paris, Oct 2009, Dir. François Fages and Sylvain Soliman,

PhD in progress : David Fournier, Université Paris Diderot, Paris, Oct 2011, Dir. François Fages and Denis Mulard (General Electric),

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

PhD in progress : Artemis Llamosi, Université Paris Diderot, Paris, Nov 2012, Dir. Grégory Batt, Jean-Marc di Meglio and Pascal Hersen (MSC)

PhD in progress : Thierry Martinez, Université Paris Diderot, Paris, Oct 2009, Dir. François Fages,

PhD in progress : Faten Nabli, Université Paris Diderot, Paris, Oct 2009, Dir. François Fages and Sylvain Soliman

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

PhD in progress : Jannis Uhlendorf, Université Paris Diderot, Paris, Oct 2009, Dir. Grégory Batt, François Fages and Pascal Hersen (MSC)

PhD in progress : Luma Vittorino, Université Paris Diderot, Paris, Oct 2012, Dir. François Fages,

9.2.3. Juries

PhD Thesis committee of Roberto Amato, Ankita Chaurasia, Francesca Fioretti, Filippo Meno-lascina, and Alessandra Vigilante, University of Naples, Italy, Member Grégory Batt.

HDR of Khallil Djelloul, University of Orléans. Reviewer François Fages.

PhD Thesis defense of Andrés A. Aristizàbal, Ecole Polytechnique. Chairman François Fages.

PhD Thesis committee of Adrien Basso-Blandin, University of Evry. Member François Fages.

PhD Thesis defense of Emmanuel Halloit, University of Nice, Villefranche sur Mer, décembre 2012. Member Denis Thieffry.

PhD Thesis defense of Guillaume Baptist, Université Joseph Fourier, Grenoble, août 2012. Reviewer Denis Thieffry.

PhD Thesis defense of Mohamed Hedi Ben Amor, Université Joseph Fourier, Grenoble, juillet 2012. Member Denis Thieffry.

9.3. Popularization

Our PNAS article attracted the attention of the media. Articles entitled “Ils contrôlent le vivant avec des ordinateurs !”, “Des cellules qui obéissent au doigt et à l’oeil”, “Focusing the phenotype - Controlling genetic expression through external feedback” appeared in *l’Humanité Dimanche*, le journal du CNRS, and *Phys.org*. Also, Grégory Batt participated to the radio program “Autour de la question” (RFI).

Two posters, “(Re)programmer le vivant” and “Des cellules pilotées par ordinateur”, were presented during the Fête de la science to a broad audience during two days by Grégory Batt.

Denis Thieffry has two books in press:

- Thieffry D. Gene networks, logical modelling, and regulatory motifs entries. In: Hancock JM, Zvelebil MJ (eds). *Dictionary of Bioinformatics and Computational Biology*. New York: John Wiley & Sons.
- Faur A, Thieffry D. Cell cycle modelling using logical rules. In: Dubitzky W, Wolkenhauer O, Cho K-H, Yokota H (eds.) *Encyclopedia of Systems Biology*. Springer.

DEDUCTEAM Team

7. Dissemination

7.1. Scientific Animation

Gilles Dowek has been a PC member of LICS, CSL, TAMC, and ICECCS. He is a member of the Scientific Board of the *Société Informatique de France*. He is a member of the *Commission de réflexion sur l'éthique de la recherche en sciences et technologies du numérique d'Allistene*. He is Deputy scientific director of Inria.

Catherine Dubois has been a PC member of TAP and AFADI. She has been the chair of the TAP steering committee since May 2012.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching activities

Olivier Hermant has taught at ISEP four engineering courses: Preparation to the ACM programming contest, Data bases, Formal methods, and Algorithmics.

Guillaume Burel has taught at ENSIIE five courses: Logic, Formal languages, Compilation, and Semantics of programming languages.

Alejandro Díaz-Caro has been teaching assistant at Paris 10 for four courses: in Mathematics (in two different degrees) and in Methodology of measure in social sciences.

Pierre Néron has been a teaching assistant in Polytech' Jussieu for two courses: Project in C and Introduction to networks.

Gilles Dowek has taught in MPRI a course: Foundations of proof systems. He has coordinated a textbook for high school students [39]. He is a member of the Scientific board of *La main à la pâte*.

7.2.2. Ph.D. supervision

Olivier Hermant supervises the theses of Ronan Saillard, Giang Le Truong, and Vivien Maisonneuve.

Catherine Dubois and David Delahaye supervise the thesis of Mélanie Jacquél and Pierre Nicolas Tollitte.

Catherine Dubois and Francois Pessaux (ENSTA) supervise the thesis of Vincent Benayoun.

Catherine Dubois supervises the research internship of Raphaël Cauderlier.

Guillaume Burel and Gilles Dowek supervise the theses of Ali Assaf and Simon Cruanes.

Gilles Dowek supervises the thesis of Pierre Néron.

7.2.3. Supervision of Masters internship

Catherine Dubois and Olivier Hermant have supervises the Masters internship of Raphaël Cauderlier.

Olivier Hermant and Mathieu Boespflug have supervised the Masters internship of Quentin Carbonneaux.

Guillaume Burel and Gilles Dowek have supervised the Masters internship of Ali Assaf.

Gilles Dowek and Pierre Néron have supervised the Masters internship of Raphaël Bost.

7.2.4. Juries

Gilles Dowek has been a member of the Jury of Vincent Demange. he has been a member of the Jury of the habilitations of Frédéric Blanqui and Sylvain Conchon.

Catherine Dubois has been a member of the jury of Maximiliano Cristia and a member of the jury of Ophaina Taoffenua.

7.3. Popularization

Gilles Dowek has given a talk at the Centre d'Alembert, at the Lycée Jacquard in Paris and at the Lycée Montaigne in Bordeaux.

FORMES Team

9. Dissemination

9.1. Scientific Animation

Frédéric Blanqui is member of the steering committee of the international conference on rewriting techniques and its applications (RTA).

Frédéric Blanqui was member of the program committee of the 6th International Workshop on Higher-Order Rewriting (HOR'12).

Jean-Pierre Jouannaud was member of the program committee of WOLLIC'2012.

Jean-Pierre Jouannaud is a member of the steering committee of LICS.

Jean-Pierre Jouannaud is a member of the Advisory Committee of Academia Sinica, Taipei.

Jean-Pierre Jouannaud is a member of the committee for the Ackermann prize (2011–2013).

Jean-Pierre Jouannaud was a member of the committee for the LICS test of time award (2012).

Vania Joloboff was invited speaker at China Open Source Week in Nanjing.

Vania Joloboff was invited speaker at a professional embedded systems workshop in Tokyo.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Ming Gu is the director of the School of Software, Tsinghua. She teaches at all levels.

Last year undergraduate: Jianqi Li, An Introduction to Theories of Software, 16 hours, L1, Tsinghua University, China

Licence : Jean-François Monin, Introduction to Interactive Proof of Software, 50 hours, L3, Tsinghua University, China

This course is expected to attract students in the FORMES group via the local PhD program; already one of them (2009) is currently a PhD student of Jean-Pierre Jouannaud, another (2010) in is the PhD track with Gu Ming and 2 others (2010) work with Jean-François Monin and Vania Joloboff.

Licence : Jean-François Monin, Introduction to Functional Programming, 25 hours, L3, Beijing Jiatong University, China

Master: He Fei, Formal verification for software systems, 32 hours, Tsinghua University, China

Master: Jianqi Li, The Formal Semantics of Programming Languages, 32 hours 2012, M1, Tsinghua University, China

Master : Jean-François Monin, Complements on Coq, 25 hours, M1-M2, Beijing University (PKU), China

Doctorate : Frédéric Blanqui, Introduction to domain theory and topology, 3 hours, ISCAS, Beijing, China

Doctorate : Jean-François Monin, Coq Summer School, 20 hours, ECNU Shanghai, China

9.2.2. Supervision

PhD & HdR :

PhD in progress : Jiaxiang LIU, Decreasing diagrams for confluence, Sept. 2011 Jean-Pierre Jouannaud

PhD in progress : Qian WANG, A Complete Formalization of Coq Modulo Theory, Sept. 2010, Jean-Pierre Jouannaud

PhD in progress : Xiaomu SHI, Formalisation and Proof of an Instruction Set Simulator, nov. 2009, Jean-François Monin and Vania Joloboff

PhD in progress : Kim Quyen LY, Automated Verification of Termination Certificates, nov. 2010, Frédéric Blanqui

9.2.3. Juries

Jean-Pierre Jouannaud: ENS-Cachan, habilitation, Florent Jacquemard (rapporteur)

Jean-François Monin: Paris-7, PhD, Stéphane Glondu (rapporteur)

Jean-François Monin participated to the recruitment of Chinese students for the polytechnic engineering schools of Grenoble, Marseille, Montpellier and Nice.

9.3. Popularization

Jean-Pierre Jouannaud gave presentations about formal proofs and related topics at Tsinghua, one in the department of applied mathematics in november 2011, and one in the department of computer science in june 2011.

Vania Joloboff has given presentations about simulation at

- Shanghai Fudan University
- Guangzhou Normal University
- a workshop in Japan about Trustworthy Embedded Systems

Jean-François Monin gave presentations about formal methods and our research at FORMES to Jiaotong (Shanghai) in June 2011, UPC (Qingdao) in October 2012, HIT (Harbin) in November 2012 and ECNU (Shanghai) in December 2012.

Jean-François Monin initiated formal agreements between several Chinese universities (Wuhan university, Beijing Jiaotong, UPC, HIT) and the Polytech Group or UJF, and developed the existing formal cooperation between Beihang and UJF.

GALLIUM Project-Team

9. Dissemination

9.1. Scientific Animation

9.1.1. Conference organization

Didier Rémy co-chaired the OCaml Users and Developers Workshop (OUD 2012), affiliated with ICFP 2012, which took place in Copenhagen, Denmark in September 2012.

Didier Rémy is organizing the next meeting of IFIP working group 2.8 “Functional programming”, which will take place in Aussois, France, in October 2013.

9.1.2. Editorial boards

Xavier Leroy was co-editor in chief of the Journal of Functional Programming until March 2012, when he stepped down at the end of his 5-year term.

Xavier Leroy is a member of the editorial boards of Journal of Automated Reasoning, Journal of Functional Programming, and Journal of Formalized Reasoning.

9.1.3. Program committees

Damien Doligez was a member of the program committee of the International Workshop on the TLA+ Method and Tools 2012 (TLA 2012), a satellite event of Formal Methods 2012 (FM 2012)

Xavier Leroy was a member of the program committees of the ACM symposium on Principles of Programming Languages (POPL 2013) and of the European Symposium on Programming (ESOP 2013). He was a member of the external review committee for the ACM conference on Programming Languages Design and Implementation (PLDI 2013).

François Pottier was a member of the program committees of the ACM workshops on ML (ML 2012), on Higher-Order Programming with Effects (HOPE 2012), and on Programming Languages meets Program Verification (PLPV 2013). He was a member of the external review committee for the ACM symposium on Principles of Programming Languages (POPL 2013).

Na Xu was a member of the program committee of the ACM SIGPLAN Workshop on Partial Evaluation and Program Manipulation (PEPM 2013).

9.1.4. Steering committees

Xavier Leroy is a member of the steering committees for the Certified Programs and Proofs (CPP) conference and for the ACM PLPV workshop.

François Pottier is a member of the steering committee for the ACM TLDI workshop.

Didier Rémy is a member of the steering committee of the OCaml Users and Implementors Workshop.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: “Algorithmique et programmation” (INF431), 13h30, L3, École Polytechnique, France. Lecturer: François Pottier (*professeur chargé de cours*).

Licence: “Algorithmique et programmation”, 40h, L3, École Polytechnique, France. Teaching assistant: Jonathan Protzenko.

Licence: “Bases de données”, 26h, L1, U. Paris Diderot, France. Teaching assistant: Julien Cretin.

Licence: “Principe de fonctionnement des machines binaires”, 33h, L1, U. Paris Diderot, France. Teaching assistant: Julien Cretin.

Licence: “Travaux dirigés de Caml Light”, 36h, L1 (classes préparatoires MPSI), Lycée Louis-le-Grand, France. Teaching assistant: Gabriel Scherer.

Master: “Functional programming and type systems”, 30h, M2, MPRI master (U. Paris Diderot and ENS Paris and ENS Cachan and Polytechnique), France. Lecturers: Xavier Leroy (12h) and Didier Rémy (18h).

Master: “Modal Web”, 36 hours, M1, École Polytechnique, France. Teaching assistant: Jonathan Protzenko.

Doctorat: “Proving a compiler: mechanized verification of program transformations and static analyses”, 7h, Oregon Programming Languages Summer School, USA. Lecturer: Xavier Leroy.

9.2.2. Supervision

PhD: Nicolas Pouillard, “A unifying approach to safe programming with first-order syntax with binders”, U. Paris Diderot, defended January 13th, 2012, supervised by François Pottier.

PhD: Tahina Ramananandro, “Mechanized formal semantics and verified compilation for C++ objects”, U. Paris Diderot, defended January 10th, 2012, supervised by Xavier Leroy.

PhD in progress: Julien Cretin, “Coercions in typed languages”, since December 2010, supervised by Didier Rémy.

PhD in progress: Alexandre Pilkiewicz (currently employed by Google in New York), “Verifying polyhedral optimizations”, U. Paris Diderot, since December 2008, supervised by François Pottier

PhD in progress: Jonathan Protzenko, “Fine-grained static control of side effects”, U. Paris Diderot, since September 2010, supervised by François Pottier.

PhD in progress: Gabriel Scherer, “Modules and mixins”, U. Paris Diderot, since October 2011, supervised by Didier Rémy.

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

9.2.3. Juries

Xavier Leroy was reviewer (*rapporteur*) for the Ph.D. of Robert Dockins (Princeton University, August 2012), Antonis Stampoulis (Yale University, October 2012), and Delphine Demange (ENS Cachan Bretagne, October 2012). He was a member of the Ph.D. jury of Ricardo Bedin França (U. Toulouse, April 2012). Xavier Leroy chaired the Habilitation jury of Fabrice Rastello, ENS Lyon, December 2012.

François Pottier was an external examiner for the Habilitation defense of Etienne Lozes (École Normale Supérieure de Cachan, July 3, 2012) and for the Ph.D. defense of Jérémy Planul (École Polytechnique, February 8, 2012), Thibaut Balabonski (Université Paris Diderot, November 16, 2012), and Antoine Madet (Université Paris Diderot, December 6, 2012).

9.3. Popularization

Jacques-Henri Jourdan participated in the organization of the *Castor* computer science contest (<http://castor-informatique.fr/>). This contest aims at making computer science more popular in French high schools and junior high schools. It attracted over 90,000 participants.

Xavier Leroy gave a popular science talk on critical avionics software at the December 2012 “Jam session” meeting of Inria Alumni.

Jonathan Protzenko, along with two other PhD students, is curating the Junior Seminar in Rocquencourt, where he coaches other PhD students into presenting their work in front of a friendly audience.

Gabriel Scherer set up a research blog for the Gallium project-team, to highlight small chunks of work of the team members in an informal and popularized style. For example, Valentin Robert, Thomas Braibant and Jacques-Henri Jourdan described various aspects of their interaction with the Coq proof assistant, some of which eventually resulted in small improvements integrated by the Coq development team. Articles are published approximately once a week, and the blog gets on average 500 visits a day.

GAMMA3 Project-Team

6. Dissemination

6.1. Teaching - Supervision - Juries

6.1.1. Teaching

Doctorat : F. Alauzet : Vérification des simulations numériques en mécanique des milieux continus, Cours de 2h au Collège de Polytechnique (Paris) avec A. Dervieux

Master (ou équivalent) : F. Alauzet: Simulation numérique en géométries complexes, niveau M1, 36 heures, École Centrale Paris

Master (ou équivalent) : A. Loseille : CAO et maillage, 35 heures, niveau M2, UPEC (Université Paris-Est Créteil), France

Licence (ou équivalent) : A. Loseille : Introduction à la discrétisation des équations aux dérivées partielles, 12 heures, niveau L3, ENSTA, France

Master (ou équivalent) : A. Loseille : Programmation pour la simulation numérique, 30 heures, niveau M1, ENSTA, France

6.1.2. Supervision

HdR : Frédéric Alauzet, Contributions aux méthodes numériques pour l'adaptation de maillage en Mécanique des Fluides, Université Paris 6, 28 Juin 2012

GANG Project-Team

7. Dissemination

7.1. Teaching - Supervision - Juries

7.1.1. Teaching

Master MPRI University of Paris Diderot:

- M. Habib, graph algorithms, 12 hours;
- P. Fraigniaud, "Algorithmique distribuée pour les réseaux", 12 hours;
- C. Delporte and H. Fauconnier, "Algorithmique distribuée avec mémoire partagée"; C. Delporte, 12 hours and H. Fauconnier, 12 hours;
- L. Viennot, "Structures de données distribuées et routage", 12 hours.

Master Professional University of Paris Diderot:

- M. Habib, Search Engines, 50 hours;
- M. Habib, Parallelism and mobility which includes peer-to-peer overlay networks, 50 hours;
- C. Delporte, Distributed programming, 85 hours;
- H. Fauconnier, Internet Protocols and Distributed algorithms, 85 hours.

Master: F. Mathieu, Peer-to-Peer Techniques, 30 hours, University of Paris 6;

D.U.T. : Y. Boufkhad, computer science and networks, 192 hours, University of Paris Diderot;

U.F.R.: F. de Montgolfier, foundation of computer science, algorithmics, and computer architecture, 192 hours, University of Paris Diderot;

Master: F. de Montgolfier, Peer-to-Peer theory and application, M2, University of Marne-la-Vallée.

7.1.2. Supervision

PhD : Hervé Baumann, "Diffusion décentralisée d'information dans les systèmes distribués", University of Paris Diderot, september 24, 2012

Xavier Koegler, "Protocoles de population, jeux et grandes populations", University of Paris Diderot, september 13, 2012

PhD in progress : François Durand, "Manipulabilité des systèmes de vote et applications aux réseaux", since 2012, supervised by Fabien Mathieu and Ludovic Noirie

Jérémie Dusart, "Parcours de graphes de cocomparabilité", since 2011, supervised by Michel Habib
Antoine Mamcarz, "Algorithmes de décomposition de graphes", since 2010, supervised by Michel Habib

The-Dang Huynh , "Extensions de PageRank et Applications aux Réseaux Sociaux", since 2012, supervised by Fabien Mathieu and Dohy Hong

Hung Tran, Failure detection with Byzantine adversary, since 2010, supervised by Hugues Fauconnier and Carole Delporte

7.1.3. Juries

HdR review: L. Viennot reviews Arnaud Legout's HDR thesis on "Efficacité et vie privée : de BitTorrent à Skype";

PhD review: L. Viennot reviews Bio Mikaila Toko Worou's PhD thesis on "Outils algorithmiques de détection des communautés dans les réseaux";

PhD thesis : L. Viennot was examiner of Quentin Godfroy's thesis on "From spanners to multipath spanners"

F. Mathieu was examiner of Claudio Testa's thesis "On the congestion control of Peer-to-peer applications: the LEDBAT case".

HIPERCOM Project-Team

8. Dissemination

8.1. Scientific Animation

Pascale Minet took an active part in the dissemination of the results obtained in the OCARI project, dealing with energy efficient industrial wireless sensor networks.

Pascale Minet was member of the program committee of:

- AdHocNets 2012, Fourth International ICST Conference on Ad Hoc Networks, October 2012.
- DCNET 2012, International Conference on Data Communication Networking, July 2012,
- ECRTS 2012, 24th EUROMICRO Conference on Real-Time Systems, July 2012.
- ETFA 2012, 17th IEEE International Conference on Emerging Technologies & Factory Automation, September 2012.
- ICN 2012, the 11th International Conference on Networks, February 2012.
- ICWCUCA 2012, the third International Conference on Wireless Communications in Unusual and Confined Areas, August 2012.
- IFIP Wireless Days 2012, November 2012.
- IUCC 2012, the 11th IEEE International Conference on Ubiquitous Computing and Communications, August 2012.
- IWCMC 2012, the 8th International Wireless Communications and Mobile Computing Conference, July 2012.
- PAEWN 2012, International workshop on Performance Analysis and Enhancement of Wireless Networks, April 2012.
- PIMRC 2012, 23rd International Symposium on Personal, Indoor and Mobile Radio Communications, September 2012.
- RTNS 2012, 19th International Conference on Real-Time and Network Systems, September 2012.
- SNPD 2012, 11th International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, June 2012.
- WINSYS 2012, International Conference on Wireless Information Networks and Systems, July 2012.

Pascale Minet was also reviewer for the following journals:

- IEEE Transactions on Industrial Informatics,
- IEEE Transactions on Vehicular Technology,
- IEEE Communication Letters,
- Real-Time Systems,
- International Journal of Communications,
- International Journal of Distributed Sensor Networks,
- Computer Communications Journal.

Paul Muhlethaler was reviewer for:

- the call 8 of the European commission : "Networks of the future".
- the European MONET project "Mechanisms for Optimization of hybrid ad-hoc networks and satellite NETWORKS".

He was also member of:

- the Steering committee of MobileHealth 2012. 2nd ACM MobiHoc Workshop on Pervasive Wireless Healthcare In Conjunction With MobiHoc 2012 Conference. June 11th. Hilton Head Island, South Carolina, USA,
- the Technical committee of The First International Workshop on Performance Evaluation and Modeling in Wireless Networks. PEMWN 2012. November 22, Tunis, Tunisia.

C'edric Adjih was member of the program committee of:

- AINTEC 2012, ACM Asian Internet Engineering Conference, November 2012.
- MILCOM 2012, IEEE Military Communications Conference, October 2012.
- VTC 2012 Fall, IEEE 76th Vehicular Technology Conference, September 2012.
- PEMWN 2012, First International Workshop on Performance Evaluation and Modeling in Wireless Networks, November 2012.

He was also reviewer for the Journal: Transactions on Sensor Networks.

Aline Carneiro Viana has been performing remote reviews of short proposals for the FET-Open program of the European Commission since January 2011. **Aline Carneiro Viana** was the general and TPC co-chair of the 4th ACM International Workshop on Hot Topics in Planet-Scale Measurement (HotPlanet 2012), together with Ahmed Helmy.

She was the Publicity Chair of:

SECON'12 *9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks*, Seoul, Korea, June 2012

ExtremeCom'12 *4th Extreme Conference on Communication*, Zurich, Switzerland, March 2012.

Aline Carneiro Viana has also served in the program committee for the [SECON'12] *9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks*, Seoul, Korea, June 2012.

Emmanuel Baccelli is TPC for IEEE SECON, IEEE Globecom PerGroup, IEEE ICC NovaEnEv, ACM Mobihoc Mobile Health. Co-organizer of international conferences ACM SESP.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

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.

8.2.2. Supervision

HdR : **Emmanuel Baccelli**, "IP-Disruptive Wireless Networking: Integration in the Internet", University Pierre et Marie Curie - Paris VI, December 2012.

PhD :

- **Salman Malik**, "Evaluation et Optimisation des Réseaux Sans Fil Denses", University Pierre et Marie Curie - Paris VI, November 2012, Philippe Jacquet, adviser.

- **Yacine Mezali**, "Algorithme de Géolocalisation Intérieure par Différenciation de Signaux WiFi", University Pierre et Marie Curie - Paris VI, March 2012, Philippe Jacquet, adviser.
- **Iskander Banaouas**, "Analyse et Optimisation des Protocoles d'Accès dans les Réseaux sans fil Ad Hoc", University Pierre et Marie Curie - Paris VI, February 2012, Paul Muhlethaler, adviser.
- **Ana Cristina B. Kochem Vendramin**, "Cultural Grant: um protocolo de roteamento baseado em inteligência coletiva para redes tolerantes a atrasos", Federal Technological University of Paraná, June 2012, Anelise Munaretto Fonseca, Myriam R. De B. da Silva Delgado, and Aline Carneiro Viana.

8.2.3. Juries

Pascale Minet was member of the Gilles Kahn 2012 jury awarding an excellent 2011 PhD thesis in Computer Science.

PhD :

- Michael Lauer, "Une Méthode Globale pour la Vérification d'Exigences Temps Réel - Application à l'Avionique Modulaire intégrée", University of Toulouse, June 2012, Pascale Minet, reviewer.
- Geovanny Mauricio Itturalde Ruiz, "Performances des Réseaux LTE", University of Toulouse, October 2012, Pascale Minet, reviewer.
- Mohamed-Haykel Zayani, "La Prédiction de Liens dans les Réseaux Sans-fil Dynamiques Centrés sur l'Être Humain", Telecom SudParis and University Pierre et Marie Curie - Paris VI, October 2012, Pascale Minet, reviewer.
- Yasir Faheem, "Energy Efficient Routing In Wireless Sensor Networks", University Paris XIII, November 2012, Paul Muhlethaler, president.
- Youghourta Benfattoum, "Network Coding for Quality of Service in Wireless Multi-hop Networks", University Orsay, November 2012, Paul Muhlethaler, examiner.
- Ibrahim Amadou, INSA Lyon, France, September 2012, Aline Carneiro Viana, reviewer.

8.3. Popularization

- **Fête de la Science organized by Inria**, in Rocquencourt, October 2012. The HIPERCOM team was very active and presented several demonstrations coordinated by Cédric Adjih. The demonstration prepared by Cédric Adjih, Nadjib Achir, Ichrak Amdouni, Hana Baccouch, Ines Khoufi, Erwan Livolant, Ridha Soua and Ala-Edin Weslati concerned the principles of wireless sensor networks, the energy-efficient routing protocol and the node coloring algorithm running in the OCARI network to maximize network lifetime.
- Cédric Adjih with the help of Ridha Soua and Ines Khoufi organized several demonstrations of wireless sensor networks for undergraduates and students who visited Inria in March, October and December 2012, respectively.

IMARA Project-Team

9. Dissemination

9.1. Scientific Animation

- An interdisciplinary workshop on inference, “**Information processing in complex systems with applications to traffic forecasting**” was organized on June 12, 2012 at Inria Paris-Rocquencourt. The intent was to bring together researchers from statistics, statistical mechanics and machine learning interested in the development of methods and algorithms to process data emerging from complex systems. Organizers were Cyril Furtlehner (TAO), Fabien Moutarde (CAOR, Mines-ParisTech) and Jean-Marc Lasgouttes.
- Guy Fayolle is
 - Scientific advisor at the *Robotics Laboratory of Mines ParisTech*.
 - Associate editor of the journal *Markov Processes and Related Fields*,
 - Regular reviewer for some journals of high repute (PTRF, MPRF, QUESTA, IEEE-IT, JSP), and also for the *AMS Mathematical Reviews*.
 - Member of the working group IFIP WG 7.3.
 - Program committee member of the regular *Int. Symposium on Computer and Information Sciences*, held in Paris at IHP in 2012. The chairman-organizer is E. Gelenbe (Imperial College, UK).

He was invited at the *Séminaire de Probabilités* of Institut Fourier (Grenoble, 11 dec. 2012) to speak on *Asymptotics of Random Walks in the Quarter Plane*. He participated in the redaction of the proposal MACCA (*Marches aléatoires confinées dans des cônes: aspects probabilistes, combinatoires et algébriques*), to be submitted January 2013. This project will be managed from the *Laboratoire de Mathématiques et Physique Théorique* à Tours (LMPT).

- Jean-Marc Lasgouttes has been reviewer for Euro Working Group on Transportation (EWGT 2012) and European Journal on Operation Research (EJOR).
- Gérard Le Lann was invited keynote speaker at Vehicular Communications and Applications (VCA 2012) Workshop (MED-HOC-NET 2012), Cyprus, June 2012.
- Philippe Morignot has been re-elected member of the steering committee of the French association for Artificial Intelligence (AFIA). He is Editor-in-Chief of the newsletter of this association. He is reviewer of the International Journal of Advanced Robotics Systems.
- Fawzi Nashashibi is:
 - Scientific advisor at the *Robotics Laboratory of Mines ParisTech*.
 - Supervisor of 2 PhD thesis at Mines ParisTech in 2012: Mr. Raoul de Charette de la Contrie and Miss Anne-Sophie Puthon and supervisor of 4 PhD thesis at Inria: B. Lefaudeux, H. Li, G. Tréhard, P. Merdrignac.
 - Supervisor of 2 PhD thesis at the École Polytechnique d’Alger: Mr. Samir Meniche et Mr. Madjid Hank.
 - Associate editor of the journal *Traitement du signal*,
 - Associate editor and reviewer of major conferences in ITS and Robotics (IEEE IV, IEEE, ITSC, IEEE ICRA, IEEE ICARCV, IEEE ICVES,...)
 - Regular reviewer for some journals of high repute (Transportation Research Part C, IJVAS, IEEE Transactions on Instrumentation and Measurement, IEEE Robotics and Automation Magazine, IEEE Transactions on ITS, IEEE TVT,...).

- Member of the European working group on Automation of the iMobility Forum.
- Member of the International Committee on Vehicle Highway Automation (AHB30)
- Member of the Technical Program Committee of the 12th International Conference on Control, Automation, Robotics and Vision (ICARCV 2012) in Guangzhou (China). He was organizer and chairman of the invited session entitled “*Coordinated Guidance of Multiple Autonomous Robots/vehicles*”.

Fawzi Nashashibi was an invited keynote speaker at the “*Workshop on Navigation, Perception, Accurate Positioning and Mapping for Intelligent Vehicles*”, at IEEE International Intelligent Vehicles Symposium (June 3-7), Alcalá de Henares (Spain). He was a keynote speaker at the seminar entitled “*Electric vehicles and urban integration*”, June 8th, Mines ParisTech. He was an invited speaker at the plenary meeting of MOV’EO on November 29th with a round table dedicated to the “*Connected Vehicle*”.

- Evangeline Pollard was a member of the Technical Program Committee of the International Conference on Information Fusion. She was the chairman of the session entitled “Localization, Navigation and Mapping” for the 12th International Conference on Control, Automation, Robotics and Vision (ICARCV 2012) in Guangzhou (China). She is reviewer for several international journals and conferences: IEEE International Conference on Robotics and Automation (ICRA’12), IEEE International Conference on Vehicular Electronics and Safety (ICVES’12), Journal of Selected Topics in Signal Processing, IEEE Transactions on Vehicular Technology, Journal of Zhejiang University Science C (Computers & Electronics).
- Oyunchimeg Shagdar is an associate editor of Wiley International Journal of Communication Systems. She was a member of Technical Program Committee of the IARIA International Conference on Emerging Network Intelligence (Emerging 2012). She is a reviewer of a number of international journals and conferences, including IEEE Communications Magazine, IEEE Communications Letter, IEICE Transactions on Communications, IEEE Vehicular Technology Conference (VTC), and IEEE International Conference on Communications (ICC).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Fawzi Nashashibi

Licence: “Programmation avancée”, 84h, niveau (L1), Université Paris-8 Saint-Denis, France

Master: “Vision pour la robotique”, 16h, 2nd year (MAREVA), Mines ParisTech, France

“Programmation C++/OpenGL”, 16h, 2nd year (MAREVA), Mines ParisTech, France

“Programmation avancée et infographie 3D”, 25h, niveau (M1), Ecole d’ingénieurs ESILV, France

“Synthèse d’images”, 12h, niveau (M2), INT Sud Telecom, France.

Jean-Marc Lasgouttes

Master: “Analyse de données”, 59.5h, second year of Magistère de Finance (M1), University Paris 1 Panthéon Sorbonne, France

Gérard Le Lann

Master: “Communications et coordination temps réel dans les réseaux véhiculaires ad hoc”, Module du cours de 5ème année “Réseaux temps réel”, INSA Lyon, January 2011

“Vehicular Ad Hoc Networks”, Module de Master, TELECOM Bretagne, Rennes, June 2011

Victorin Martin

Licence: “Statistiques”, 9h, first year of Ecole Centrale Paris (L3) Châtenay-Malabry, France

Philippe Morignot

Licence: “Constraint programming”, 15h, L3, Epita (Le Kremlin-Bicêtre)

Licence: “Linear programming”, 15h, L3, Epita (Le Kremlin-Bicêtre)

Licence: “Rule-based systems”, 15h, L3, Epita (Le Kremlin-Bicêtre)

9.2.2. Supervision

PhD: Manabu, “Communications Management in Cooperative Intelligent Transportation Systems”, Mines Paris Tech, defended on December 20, 2012, supervisor: Arnaud de La Fortelle, co-supervisor Thierry Ernst

PhD: Hao Li, “Cooperative perception: application in the context of intelligent vehicles systems”, Mines ParisTech, defended on the 21st September 2012, supervisor: Fawzi Nashashibi

PhD in progress: Victorin Martin, “Modélisation probabiliste et inférence par propagation de croyances: application au trafic routier”, from 01/12/2009, supervisor Arnaud de La Fortelle, co-supervisors Cyril Furtlehner and Jean-Marc Lasgouttes

PhD in progress: Benjamin Lefaudeux, “Multi-sensors fusion for dynamic road mapping: application to autonomous vehicles”, from 01/10/2012, supervisor: Fawzi Nashashibi

PhD in progress: Ines Ben Jemaa, “Communications and Management Control for Cooperative Vehicular Systems”, from January 01, 2011, supervisor: Arnaud de La Fortelle, co-supervisor Paul Muhlethaler, Oyunchimeg Shagdar

PhD in progress: Guillaume Tréhard, “Autonomous urban driving: dealing with intersections”, from 01/10/2012, supervisor: Fawzi Nashahibi, co-supervisor: Evangeline Pollard

PhD in progress: Pierre Merdrignac, “Development of cooperative perception and communication system for vulnerables’ safety enhancement”, started at the 1st October 2012, supervisor: Fawzi Nashashibi, co-supervisor: Oyunchimeg Shagdar, Evangeline Pollard

9.2.3. Juries

Fawzi Nashashibi was a reviewer of the following HDR thesis defense:

- Mr. Alain Lambert, “Contribution à la navigation en robotique mobile”, University of Orsay Paris-Sud, Orsay, 10/12/2012.
- Mr. Raphaël Labayrade, “Perceptions artificielle et humaine pour l’amélioration de la sécurité et du confort dans les espaces construits”, University Pierre et Marie Curie (Paris 6), Paris, 06/04/2012.

Fawzi Nashashibi was a reviewer of the following PhD thesis defense:

- Mr. Sébastien Demmel, “Building an augmented map for road risk assessment”, Queensland University of Technology (Australia) and University of Versailles Saint-Quentin-en-Yvelines, Vélizy, 14/12/2012.
- Mr. Antoine Zanuttini, “Du photoréalisme au rendu expressif en image 3D temps réel dans le jeu vidéo : programmation graphique pour la profondeur de champ, la matière, la réflexion, les fluides et les contours. ”, University of Saint-Denis (Paris-8), St-Denis, 16/11/2012.
- Miss Edwige Lelièvre, “Des jeux de rôle en ligne tridimensionnels aux jeux à réalité alternée : expérience esthétique, création et expérimentation”, University of Saint-Denis (Paris-8), St-Denis, 09/11/2012.
- Mr. David Marquez-Gamez, “Towards visual navigation in dynamic and unknown environment: trajectory learning and following, with detection and tracking of moving objects”, INSA (University of Toulouse), Toulouse, 26/10/2012.
- Mr. Naveed Mohammad, “Contribution to the use of 3D lidars for autonomous navigation: calibration and qualitative localization”, University of Toulouse, Toulouse, 01/02/2012.

Fawzi Nashashibi was an examiner of the following PhD thesis defense:

- Mr. Benoît Chrétien, “Simulation of a new automotive concept based on a centralized approach for driver assistance system activation decision”, University Evry-Val-d’Essonne, Evry, 06/01/2012.
- Mr. Raoul de Charette de la Contrie, “Vision Algorithms for Rain and Traffic Lights in Driver Assistance Systems”, Mines ParisTech, Paris, 17/09/2012.
- Mr. Hao Li, “Cooperative Perception: Application in the Context of Outdoor Intelligent Vehicle Systems”, Mines ParisTech, Paris, 21/12/2012.

9.3. Popularization

- Several members of the project-team participated to demonstrations at the national “Fête de la Science”, October 10-13.
- Philippe Morignot presented the domain of Artificial Intelligence to three college students (TPE, Travaux Pratiques Encadrés) from the Lycée Jules Ferry, Versailles.

IMEDIA2 Team

8. Dissemination

8.1. Scientific Animation

8.1.1. The ImageCLEF2012 Plant Task Identification Organisation and participation

Participants: Vera Bakic, Itheri Yahiaoui, Sofiene Mouine, Saloua Ouertani-Litayem, Wajih Ouertani, Anne Verroust-Blondet, Hervé Goëau.

We organized for the second year the plant task identification at the ImageCLEF evaluation forum for the cross-language annotation and retrieval of images (<http://www.imageclef.org/2012/plant>). The ImageCLEF's plant identification task [21] provides a testbed for the system-oriented evaluation of plant identification, more precisely on the 126 tree species identification based on leaf images. Three types of image content were considered: Scan, Scan-like (leaf photographs with a white uniform background), and Photograph (unconstrained leaf with natural background). The main originality of this data is that it was specifically built through a citizen sciences initiative conducted by Tela Botanica, a French social network of amateur and expert botanists. This makes the task closer to the conditions of a real-world application. With a total of eleven groups from eight countries and with a total of 30 runs submitted, involving distinct and original methods, this second year pilot task confirmed Image Retrieval community interest for biodiversity and botany, and highlights further challenging studies in plant identification.

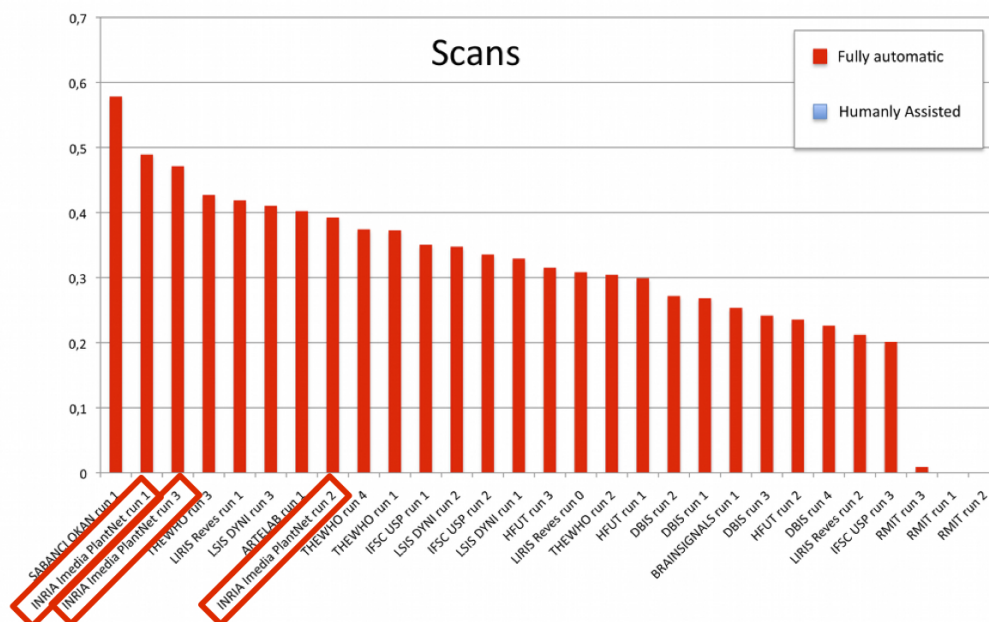


Figure 6. IMEDIA2's results at ImageCLEF2012 on Scan leaf images.

For the second year, members of IMEDIA2 team participated within the PI@ntNet project to the ImageCLEF plant identification task [20]. The runs submitted used very distinct approaches sometimes relying on similar extracted features. For Scan and Scan-like categories, the first two runs combined distinct local and contour approaches in two ways (late and early fusion), while the third run explored the learning capacity of a multi-class SVM technique on a contour based descriptor. For Photograph, our runs used local features positioned towards the center of the image to reduce the impact of background features. In the second run, an automatic segmentation with a rejection criterion was attempted. In the third run, points were associated with interesting zones. In general, even if they were distinct, the methods used performed very well.

8.1.1.1. *Nozha Boujemaa*

- Re-elected member in the Steering Board of NEM ETP (Networked and Electronic Media European Technology Platform) and acting as Inria representative.
- Scientific coordinator of PI@ntNet.
- Member of the steering committee of CHORUS+.
- Founding member of the ACM ICMR "ACM International Conference on Multimedia Retrieval" born from the fusion of: ACM MIR (International Conference on Multimedia Information Retrieval) and ACM CIVR (International Conference on Image and Video Retrieval)
- Member of the steering committee of ACM ICMR.
- Responsibilities within Inria: Director of the Inria Saclay Ile-de-France research center.

8.1.1.2. *Anne Verroust-Blondet*

- Member of the steering committee of PI@ntNet (WP5 co-leader: "Dissemination").
- Member of the steering committee of I-SEARCH (WP4 leader).
- Member of the committee for the "Corpus, data and tools for research in Humanities and Social Sciences" 2012 programme of the Social Sciences and Humanities department of the French National Research Agency (ANR).
- Member of the committee for the "COOPERATION 2011 - Partnerships of Production and Research Institutions in Focused Research and Technology Sectors" national action of the Ministry of Education, lifelong learning and religious affair of the Hellenic Republic.
- Expert for the Austrian Science Fund (FWF).
- Member of the steering committee of the CNRS GDR IG (Informatique Graphique).
- Member of the technical programme committee of the Fourth International Conference on Advances in Multimedia (MMEDIA 2012).
- Member of the editorial board of the "Revue Electronique Francophone d'Informatique Graphique" (REFIG).

8.2. Teaching - Supervision - Juries

8.2.1. *Teaching*

Licence : Amel Hamzaoui, Algorithm and programming, 48 hours/year, L1, Orsay Paris 11 University, France.

Licence : Amel Hamzaoui, Web programming, 24 hours/year, L1, Orsay Paris 11 University, France.

Licence : Sofiene Mouine, C2I, 36 hours/year, L2, Paris 1 (Panthéon-Sorbonne) University, France.

Licence : Saloua Ouertani-Litayem, C2I, 48 hours/year, L1, Institut Henri Piéron, Paris 5 University, France.

Licence : Asma Rejeb Sfar, Algorithms, 32 hours/year, L1, Paris Dauphine University, France.

8.2.2. *Supervision*

PhD: Amel Hamzaoui, Shared-Neighbours methods for visual content structuring and mining, Université Paris 11 Orsay, May 10 2012, Nozha Boujemaa and Alexis Joly;

PhD in progress: Esmâ Elghoul, 3D model segmentation, October 2010, Anne Verroust-Blondet;

PhD in progress: Sofiene Mouine, Geometric models for a local description of images, October 2010, Anne Verroust-Blondet and Itheri Yahiaoui;

PhD in progress: Wajih Ouertani, Relevance feedback on local features: application to plants annotations and identification, October 2008, Nozha Boujemaa and Michel Crucianu;

PhD in progress: Saloua Ouertani-Litayem, Visual similarity sensitive hashing methods for semantic image search in very large collections of images, October 2009, Nozha Boujemaa and Alexis Joly;

PhD in progress: Asma Rejeb Sfar, Machine Identification of Biological Shapes, October 2010, Nozha Boujemaa, Donald Geman;

PhD in progress: Mohamed Riadh Trad, Scalable information retrieval in distributed architectures, October 2009, Nozha Boujemaa and Alexis Joly;

PhD in progress: Zahraa Yasseen, Sketch-based approaches using images and curves, February 2011, Anne Verroust-Blondet.

8.2.3. *Juries*

Anne Verroust-Blondet has been a jury member (rapporteur) of Thibault Luginbuhl PhD thesis, "Régularisation de Surface 3D par une approche fondée sur un modèle", Télécom ParisTech, January 2012.

MATHRISK Team

8. Dissemination

8.1. Scientific Animation

8.1.1. Collective responsibilities

- A. Alfonsi: Co-organizer of the working group seminar of MathRisk “Méthodes stochastiques et finance”.
- D. Lamberton:
 1. "Associate Editor" of *Mathematical Finance*, co-editor of *ESAIM P&S*.
 2. In charge of the master program “Mathématiques et Applications” (Universities of Marne-la-Vallée, Créteil and Evry, and Ecole Nationale des Ponts et Chaussées).
 3. Vice-président recherche, Université Paris-Est Marne-la-Vallée.
- A. Sulem:
 1. Associate editor of:
 - * *SIAM Journal on Financial Mathematics (SIFIN)* (since its creation in 2008)
 - * *International Journal of Stochastic Analysis (IJSA)* (since 2009)
 - * *Journal of Mathematical Analysis and Applications (JMAA)*(since 2011)
 2. Jury for assistant professor position in financial mathematics and numerical probability, Laboratoire de probabilités Université Paris VII, 2012.
- B. Jourdain and A. Sulem: Organisation of a school CEA EDF Inria "Systemic Risk and Quantitative Risk management", Octobre 15-17 2012, http://bit.ly/finance_inria

8.1.2. Invitations and participation in conferences

- A. Sulem
 - Plenary conferences
 - Main speaker, "Probability & Finance" Final Conference of the Research Project PRIN 2008 Pescara, Italy, September 2012 <http://www.dec.unich.it/convsem/2012-09-10/?home>
 - Cornell University, ORIE Colloquium, April 10 2012 <http://www.orie.cornell.edu/news/seminars/>
 - invited conferences
 - "PDE and Mathematical Finance V", Stockholm, June 10-14, 2013.
 - Symposium "Commodities, Energy Markets & Equilibrium" , 4th Conference of the Financial Mathematics and Engineering (FME) SIAG (SIAM Activity Group). Minneapolis, Minnesota, July 9-11, 2012. <http://www.siam.org/meetings/fm12/>
 - Université Evry seminar, Juin 2012
 - Semester program on Stochastic Analysis and Applications at the Centre Interfacultaire Bernoulli, Ecole Polytechnique Fédérale de Lausanne, January-June 2012.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- A. Alfonsi:

1. “Modéliser, Programmer et Simuler”, second year course at the Ecole des Ponts.
 2. “Calibration, Volatilité Locale et Stochastique”, third-year course at ENSTA (Master with Paris I).
 3. “Traitement des données de marché : aspects statistiques et calibration”, lecture for the Master at UPEMLV.
 4. “Mesures de risque”, Master course of UPEMLV and Paris VI.
- V. Bally:
 1. Master 2 of the University Marne la Vallée:
 - Malliavin Calculus and numerical applications in finance
 - Probabilistic methods for risk analysis.
 - Taux d’itérêt
 - B. Jourdain :
 1. Course "Probability theory and statistics", first year ENPC
 2. Course "Introduction to probability theory", 1st year, Ecole Polytechnique
 3. Course "Stochastic numerical methods", 3rd year, Ecole Polytechnique
 4. projects in finance and numerical methods, 3rd year, Ecole Polytechnique
 - B. Jourdain, B. Lapeyre: course "Monte-Carlo methods in finance", 3rd year ENPC and Master Recherche Mathématiques et Application, University of Marne-la-Vallée
 - J.-F. Delmas, B. Jourdain: course "Jump processes with applications to energy markets", 3rd year ENPC and Master Recherche Mathématiques et Application, university of Marne-la-Vallée
 - D. Lamberton:
 1. Second year of Licence de mathématiques (probability), Université Paris-Est Marne-la-Vallée.
 2. Master course “Calcul stochastique et applications en finance”, Université Paris-Est Marne-la-Vallée.
 - A. Sulem:
 1. Master course, Université Paris IX-Dauphine, Département MIDO (Mathématiques et Informatique de la Décision et des Organisations), Master MASEF, 21 h., *Méthodes numériques en Finance*
 2. Master of Mathematics, Université du Luxembourg, 15h, 2012. *Numerical Methods in Finance*.

8.2.2. Supervision

- HdR :

Aurélien Alfonsi, *Discrétisation de processus et modélisation en finance*, December 14 2012 , Ecole des Ponts Université Paris Est
- PhD :

Lokmane Abbas Turki. *Calcul parallèle pour les problèmes linéaires, non-linéaires et linéaires inverses en finance*. PhD thesis, Université Paris-Est, September 21, 2012, this thesis was funded by Credinext.
Advisers: D. Lamberton and B. Lapeyre,
Current Position: Postdoc, Humboldt University, Berlin
- PhD in progress
 - José Infante Acevedo: (from Oct. 2009). Half of this thesis is dedicated to *liquidity risk and limit order books modelling* . Adviser: A. Alfonsi.

- Pierre Blanc: *Modeling the price impact of limit and market orders*. Adviser: A. Alfonsi.
- Ayech Bouselmi: (3rd year, started in October 2009). Allocataire de recherche, Université Paris-Est. *Lévy processes and multi-dimensional models in finance*. Adviser: D. Lamberton.
- Roxana Dumitrescu: started October 2012, *Gestion de risques sous contraintes de portefeuille*. Fondation Sciences Mathématiques de Paris grant, Inria and Université Paris-Dauphine, Inria adviser: A. Sulem.
- Jing Chen: (Shandong University grant), Inria *Non Markovian Stochastic Control and Backward SDEs*, Adviser: A. Sulem .
- Maxence Jeunesse: (started in November 2009), *Study of some numerical methods in finance*. Adviser: B. Jourdain and J.-Ph. Chancelier, chair "Risques financiers" grant.
- Jyda Mint Moustapha: (started in november 2012), IFSTTAR, *Etude et caractérisation de pelotons de véhicules sur des routes à forte circulation*. Advisers: D. Daucher and B. Jourdain.
- Ernesto Palidda: ENPC and Crédit Lyonnais GRO. *Multi-dimensional stochastic volatility for Interest Rates*. Adviser: B. Lapeyre.
- Paola Pigato: (started November 2012). UPEMLV and University of Pisa, *Calcul de Malliavin*. Adviser: V. Bally.
- Clément Rey: ENPC and UPMLV. *Weak error analysis of discretization schemes for some financial processes*. Advisers: A. Alfonsi and V. Bally.
- Julien Reygner: (started in september 2011), IPEF, ENPC. *Convergence à l'équilibre de processus stochastiques*. Advisers: L. Zambotti and B. Jourdain.
- Victor Rabiet: (started 01/10/2009). ENS Cachan and UPEMLV : *Régularité du semi-groupe pour des équations stochastiques avec sauts*. Adviser: V. Bally.

8.2.3. Juries of PhD

- Agnes Sulem
 - Carmine De Franco, Laboratoire de Probabilités et Modeles Aléatoires (LPMA), Université Paris VII, 29 Juin 2012.
 - Lebovits Joachim, Ecole Centrale de Paris, 25 janvier 2012: Stochastic calculus with respect to multi-fractional Brownian motion and applications to finance
- Damien Lamberton
 - Carmine De Franco, Laboratoire de Probabilités et Modeles Aléatoires (LPMA), Université Paris VII, 29 Juin 2012.

MICMAC Project-Team

8. Dissemination

8.1. Animation of the scientific community

E. Cancès

- is a member of the editorial boards of *Mathematical Modelling and Numerical Analysis* (2006-), of *SIAM Journal of Scientific Computing* (2008-), and 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,
- is a member of the scientific committee of the GDR co-DFT.

E. Cancès has organized or co-organized

- a workshop on the mathematics and numerical analysis of electronic structure models, Beijing, China, June 2012,
- a workshop on quantum and atomistic modeling of materials defects, IPAM-UCLA, Los Angeles, USA, October 2012.

I. Dabo, V. Ehrlacher and G. Stoltz have co-organized a CFCAM meeting on numerical and mathematical problems for solar cell devices, in Paris, France, 5 september 2012.

C. Le Bris is co-Editor-in-chief (with A.T. Patera, MIT) (2005-) of *Mathematical Modeling and Numerical Analysis*. He is editor-in-chief of *Applied Mathematics Research Express* (2003-). He is a member of the editorial boards of *Archive for Rational Mechanics and Analysis* (2004-), *COCV (Control, Optimization and Calculus of Variations)* (2003-), *Mathematics in Action* (2008-), *Networks and Heterogeneous Media* (2005-), *Nonlinearity* (2005-), *Journal de Mathématiques Pures et Appliquées* (2009-). He is a member of the editorial board 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 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,
- Conseil de perfectionnement du Master de Mathématiques de l’Université Pierre et Marie Curie.

C. Le Bris has held a position of Visiting Professor at the University of Chicago, October-November 2012.

F. Legoll is a member of the editorial board of *SIAM MMS* (2012-) and of *ESAIM Proc* (2012-).

F. Legoll has co-organized with B. Kraczek, R. Jones and K. Mandadapu a mini-symposium on "Atomistic basis of thermal processes in driven systems" at the 22nd International Workshop on Computational Mechanics of Materials (IWCMM XXII), Baltimore, Sept. 24-26 2012.

T. Lelièvre is an Ordway visiting professor at the University of Minnesota for the academic year 2012-2013.

T. Lelièvre has co-organized a CECAM workshop "Free energy calculations: From theory to applications" at the Ecole des Ponts, June 4th-8th 2012.

F. Nier is a member of the scientific committee of

- the workshop "Mathematics for semiconductor heterostructure 2012" WIAS-Berlin, September 2012,
- the CNRS-GDR "Dynamique Quantique" led by S. de Bièvre.

G. Stoltz has co-organized the workshop "Nonequilibrium Statistical Mechanics: Mathematical Understanding and Numerical Simulation" held at BIRS, Banff, Canada, November 12-16, 2012.

I. Dabo, V. Ehrlacher and G. Stoltz have co-organized a CFCAM discussion day on "Numerical methods and mathematical approaches for solar devices" in Inria Paris, September 5th, 2012.

V. Ehrlacher and T. Lelièvre have co-organized a thematic minisymposium on greedy algorithms for high-dimensional problems at AIMS 2012, Orlando, USA, July 2012.

8.2. Teaching - Supervision

The members of the team have taught the following courses:

- Licence: Analyse, 27h, L1, Université de Cergy Pontoise, France (S. Lahbabi)
- Licence: Analyse, 36h, L3, Ecole des Ponts, France (E. Cancès, F. Legoll, G. Stoltz, M. Rousset)
- Licence: Calcul Scientifique, 30h, L3, Ecole des Ponts ParisTech, France (M. Dobson, S. Boyaval, G. Stoltz)
- Licence: Formation au logiciel scientifique SCILAB, 12h, L3, Ecole des Ponts ParisTech, France (D. Benoit),
- Licence: Tutorat de Maths, 9h, L3, Ecole des Ponts ParisTech, France (D. Benoit),
- Licence: Probability, 42h, L3, Ecole des Ponts, France (M. Rousset).
- Licence: Projets de physique, 20h, L3, Ecole des Ponts, France (I. Dabo, G. Stoltz)
- Licence: Formation aux logiciels scientifiques, 12h, L3, Ecole des Ponts, France (I. Dabo)
- Master: Introduction au calcul Scientifique, 12h, M1, Ecole des Mines ParisTech, France (D. Benoit, W. Minvielle, G. Stoltz)
- Master: Analyse Numérique et Optimisation, 56h, M1, Ecole Polytechnique, France (E. Cancès)
- Master: Méthodes variationnelles en mécanique quantique, 12h, M2, University Paris 6, France (E. Cancès)
- Master: Mathématiques des modèles multiéchelles, 39h, M1, Ecole des Ponts ParisTech, France (F. Legoll)
- Master: Problèmes multi-échelles, 24h, M2, Université Paris 6, France (F. Legoll)
- Master: Analyse spectrale, 39h, M1, Ecole des Ponts, France (G. Stoltz)
- Master: Spectral theory of Schrodinger operators, 30h, M2, Université de Marne-la-Vallée, France (G. Stoltz)
- Master: Méthodes déterministes en mathématiques financières, 42h, M2, Ecole des Ponts ParisTech (T. Lelièvre).
- 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: Mathématiques appliquées, 18h, University Lille 1, France (M. Rousset).
- Master: Simulation numérique en science des matériaux, 18h, M1, Ecole des Ponts, France (I. Dabo, M. Vandamme)
- Doctorat: Introduction à l'informatique scientifique, 24h, Université Paris-Est, France (I. Dabo)

F. Legoll has supervised the internship of William Minvielle (Paris 6, Master 2) from March 1st to July 31st, 2012.

The following PhD & Habilitation were defended:

- PhD: V. Ehrlacher, Some mathematical and numerical problems in quantum mechanics and uncertainty quantification, Université Paris-Est, Ecole des Ponts ParisTech, supervised by E. Cancès and T. Lelièvre
- HdR: G. Stoltz, Molecular Simulation: Nonequilibrium and Dynamical Problem, Université Paris-Est, June 18th, 2012,
- PhD: F. Thomines, Méthodes mathématiques et techniques numériques de changement d'échelle : application aux matériaux aléatoires, Université Paris-Est, Ecole des Ponts ParisTech, 22 nov. 2012, supervised by C. Le Bris.

The following PhDs are in progress:

- PhD in progress: H. Alrachid, Méthodes numériques en simulation moléculaire, Université Paris-Est, Ecole des Ponts ParisTech, started october 1st, 2012, supervised by T. Lelièvre
- PhD in progress: D. Benoit, Méthodes numériques pour la simulation des fluides non-Newtoniens, Université Paris-Est, Ecole des Ponts ParisTech, started october 1st, 2010, supervised by C. Le Bris and T. Lelièvre
- PhD in progress: D. Gontier, started September 1st, 2012, supervised by E. Cancès
- PhD in progress: S. Lahbabi, Mathematical study of quantum crystals with random defects, University of Cergy-Pontoise, started september 1st 2010, supervised by E. Cancès and M. Lewin
- PhD in progress: W. Minvielle, Méthodes numériques pour les matériaux, Université Paris-Est, Ecole des Ponts ParisTech, started october 1st, 2012, supervised by C. Le Bris and F. Legoll
- PhD in progress: N. Mourad, A mathematical and numerical analysis of the pseudopotential method, Université Paris-Est, Ecole des Ponts ParisTech and Lebanese CNRS, started September 1st, 2011, supervised by E. Cancès, A. Kashmar and A. Mourad

8.3. Conference participation

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

- D. Benoit, International Workshop on Numerical Methods for Non-Newtonian Flows, Blois (France), March 2012,
- D. Benoit, Congrès CANUM 2012, Superbesse (France), May 2012,
- D. Benoit, Multiscale Materials Modeling (MMM) conference 2012, Singapour (Singapour), October 2012
- D. Benoit, Colloque Modélisation numérique des mélanges grains-fluides, Montpellier (France), October 2012
- I. Dabo, Workshop on Corrective Approaches to DFT for Strongly-correlated Systems, CECAM, EPFL, Lausanne, June 2012
- I. Dabo, Young Engineers and Scientists Symposium, University of California, Berkeley, March 2012
- I. Dabo, CECAM Meeting on Electron Correlation, Ecole Polytechnique, Palaiseau, December 2012
- I. Dabo, Energy from the Sun: Computational Chemists and Physicists Take Up the Challenge, CECAM Conference, Cagliari, September 2012
- I. Dabo, PRACE F2F Workshop, CEA Saclay, June 2012

- I. Dabo, 2nd TYC Energy Materials Workshop, Thomas Young Centre, King's College, London, June 2012
- I. Dabo, American Physical Society Meeting, Boston, March 2012
- E. Cancès, Mathematics meets Chemistry workshop, Erlangen, Germany, March 2012,
- E. Cancès, AIMS 2012, Orlando, USA, July 2012,
- E. Cancès, ICMP 2012, Aalborg, Denmark, August 2012,
- E. Cancès, IPAM workshop, Los Angeles, USA, October 2012
- E. Cancès, weekly seminar of the mathematics department, Université d'Orsay, January 2012,
- E. Cancès, weekly seminar of the mathematics department, Berkeley University, USA, January 2012,
- E. Cancès, working group on numerical methods, Université Paris 6, January 2012,
- E. Cancès, weekly seminar of the mathematics department, ENSTA, March 2012,
- E. Cancès, K. Burke's group meeting, chemistry department, Irvine University, USA, October 2012,
- E. Cancès, NAS group meeting, physics department, Louvain-la-Neuve, Belgium, November 2012,
- V. Ehrlacher, SIAM Conference on Uncertainty Quantification, Raleigh, USA, April 2012.
- V. Ehrlacher, workshop on Mathematical and Numerical Analysis of Electronic Structure Models, Beijing, China, June 2012.
- V. Ehrlacher, 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, USA, July 2012.
- V. Ehrlacher, Séminaire d'Analyse numérique - Equations aux dérivées partielles du Laboratoire Paul Painlevé, Lille, France, Mars 2012.
- V. Ehrlacher, Groupe de travail EDP et analyse numérique LAMA-CERMICS, Marne-la-Vallée, France, May 2012.
- V. Ehrlacher, Séminaire des thésards du laboratoire AGM, Cergy, France, May 2012.
- V. Ehrlacher, IPAM MD2012 Seminar Series, Los Angeles, USA, September 2012.
- V. Ehrlacher, Applied Mathematics/PDE Seminars of University of California of Santa Barbara, Santa Barbara, USA, November 2012.
- V. Ehrlacher, IPAM Workshop IV: Computational Methods for Multiscale Modeling of Materials Defects, Los Angeles, USA, December 2012.
- S. Lahbabi, Weekly seminar of the mathematics department, University of Cergy Pontoise, November 2012,
- C. Le Bris, plenary lecture, 60-th annual SIAM meeting, July 2012, Minneapolis, USA.
- C. Le Bris, Workshop Inhomogeneous Random Systems IRS2012, Institut Henri Poincaré (Paris), January 2012.
- C. Le Bris, International conference on PDEs, Shanghai, June 2012
- C. Le Bris, ICMS workshop Edinburgh, June 2012.
- C. Le Bris, ACMAC workshop on Image and waves in complex media, June 2012, Heraklion, Crete.
- C. Le Bris, Journées MMCS, Université de Lyon, September 2012.
- C. Le Bris, keynote lecturer, 2012 Woudschoten Conference, October, 2012, Zeist, The Netherlands.
- C. Le Bris, IPAM program on " Materials Defects: Mathematics, Computation, and Engineering", December 2012.
- C. Le Bris, Mathematics Seminar, Freie Universität Berlin, May 2012.
- C. Le Bris, Scientific and statistical computing seminar University of Chicago, October 2012.

- F. Legoll, workshop on “Mathematical theory and computational methods for multiscale problems”, Singapore, January 2012,
- F. Legoll, American Physical Society meeting, Boston, February 2012,
- F. Legoll, Workshop “Mathematics meets Chemistry and Physics”, Erlangen, March 2012,
- F. Legoll, CECAM workshop on “Free energy calculations: From theory to applications”, Paris, June 2012,
- F. Legoll, AIMS conference, Orlando, July 2012,
- F. Legoll, WCCM conference, Sao Paulo, July 2012,
- F. Legoll, ECCOMAS conference, Wien, September 2012,
- F. Legoll, NumDiff 13 Conference, Halle, September 2012,
- F. Legoll, 22nd Int. Workshop on Computational Mechanics of Materials, Baltimore, September 2012,
- F. Legoll, Kickoff meeting of the “Laboratoire International Associé Nancy/UIUC”, Nancy, November 2012,
- F. Legoll, Workshop on “Nonequilibrium Statistical Mechanics”, Banff, November 2012,
- F. Legoll, séminaire du groupe de travail Homogénéisation et Echelles Multiples, Paris 6, November 2012,
- F. Legoll, Workshop on “Computational Methods for Multiscale Modeling of Materials Defects”, IPAM Los Angeles, December 2012,
- F. Legoll, Lake Arrowhead culminating workshop, IPAM Los Angeles, December 2012,
- T. Lelièvre, Workshop on Multiscale Modeling, Simulation, Analysis and Application, Singapore, January 2012.
- T. Lelièvre, Workshop on Interplay of Analysis and Probability in Physics, Oberwolfach, January 2012.
- T. Lelièvre, Séminaire de mathématiques, Université de Marne-la-Vallée, January 2012.
- T. Lelièvre, Séminaire du MAPMO, Orléans, February 2012.
- T. Lelièvre, Workshop BEMOD12 “Beyond Molecular Dynamics: Long Time Atomic-Scale Simulations”, MPIPKS, Dresden, March 2012.
- T. Lelièvre, Analysis seminar, MPI Leipzig, April 2012.
- T. Lelièvre, Arbeitsbereich Numerik Mathematisches Institut seminar, Uni Tuebingen, May 2012.
- T. Lelièvre, plenary speaker at the CANUM conference, Superbesse, May 2012.
- T. Lelièvre, Workshop “Computation of transition trajectories and rare events in non-equilibrium systems”, ENS Lyon, June 2012.
- T. Lelièvre, Journées ERGONUM “Analyse probabiliste des systèmes en temps long”, Inria Sophia-Antipolis, June 2012.
- T. Lelièvre, AIMS conference, Orlando, July 2012.
- T. Lelièvre, plenary speaker at the EVOLVE 2012 conference, Mexico, August 2012.
- T. Lelièvre, Workshop “Modelling the Dynamics of Complex Molecular Systems”, Lorentz Center, Leiden, August 2012.
- T. Lelièvre, Tutorial "Materials Defects", IPAM, Los Angeles, September 2012,
- T. Lelièvre, Workshop "Quantum and Atomistic Modeling of Materials Defects", IPAM, Los Angeles, October 2012,
- T. Lelièvre, Workshop “Nonequilibrium Statistical Mechanics: Mathematical Understanding and numerical Simulation” BIRS, Banff, Canada, November 2012.

- F. Nier: Séminaire Univ. Nantes, January 2012.
- F. Nier: Invitation for one week in TU-Universität Braunschweig (Germany) February 2012
- F. Nier: Séminaire Univ. Bordeaux, March 2012.
- F. Nier: Analytic torsion and its applications, Conference organized by J.M. Bismut and W. Müller, Univ. Paris 11, June 2012.
- F. Nier: Invitation for three weeks in WIAS-Berlin (Germany), September 2012
- F. Nier: Workshop "Mathematics for Semiconductor Heterostructures: Modeling, Analysis, and Numerics", WIAS-Berlin (Germany), organized by K. Gaertner, A. Glitzky, H.C. Kaiser, and F. Nier, September 2012.
- F. Nier: Lectures on Semi-classical analysis, organized by S. Fujie and T. Watanabe, Ritsumeikan University (Japan), October 2012.
- F. Nier: "Workshop on Spectral Analysis, Stability and Bifurcations in Modern Nonlinear Physical Systems", organized by O. Kirillov and Y. Fukumoto, BIRS Banff (Canada), November 2012.
- F. Nier: Séminaire de Probabilités, Univ. Rennes 1 (France), November 2012.
- F. Nier: Paris-London seminar, Inst. Henri Poincaré, Paris (FRANCE), December 2012
- M. Rousset, CECAM Workshop "Free energy calculations: From theory to applications", Marne-la-Vallée, June 2012,
- M. Rousset, Workshop "Mathematical and Numerical Analysis of Electronic Structure Models", Beijing, China, June 2012,
- M. Rousset, Evolve Conference, Mexico City, Mexico, August 2012.
- M. Rousset, BIRS Workshop "Nonequilibrium Statistical Mechanics: Mathematical Understanding and numerical Simulation", Banff, Canada, November 2012.
- G. Stoltz, Workshop "Quantum and Atomistic Modeling of Materials Defects", IPAM, Los Angeles, October 2012,
- G. Stoltz, Workshop "Mathematical and Numerical Analysis of Electronic Structure Models", Beijing, China, June 2012,
- G. Stoltz, CECAM workshop "Free energy calculations: From theory to applications", Marne-la-Vallée, June 2012,
- G. Stoltz, seminar at Collège de France, June 2012,
- G. Stoltz, seminar at University of Edinburgh, February 2012,

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

- E. Cancès, Chinese Academy of Sciences, Beijing, China, April 2012.
- E. Cancès, IPAM-UCLA, Los Angeles, USA, October 2012,
- F. Legoll, IPAM UCLA (program on "Materials Defects: Mathematics, Computation, and Engineering"), Los Angeles, USA, December, 2012.
- F. Nier: Invitation for one week in Tokyo University (Japan), November, 2012.

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

- E. Cancès, Lectures (6h) on spectral theory for electronic structure modeling, Chinese Academy of Sciences, Beijing, China, April 2012,
- E. Cancès, Lectures (2h) on numerical methods for Density Functional Theory, Ecole des Houches, June 2012,
- C. Le Bris, Lectures on Stochastic homogenization, Series of 90-minute lectures, Summer course on homogenization, Chicago, June 18-29, 2012.
- C. Le Bris, Graduate course, 'Mathematical introduction to complex fluids modeling', The University of Chicago, 24 hours, October-November 2012.
- F. Nier, Lectures for PhD students and researchers about "Semiclassical analysis and mean field dynamics", held in CERMICS-ENPC, 5x2 hours, April-May 2012.

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

- V. Ehrlacher, IPAM Workshop I: Quantum and Atomistic Modeling of Materials Defects, Los Angeles, USA, October 2012.
- W. Minvielle, IPAM Workshop IV: Quantum and Atomistic Modeling of Materials Defects, Los Angeles, USA, December 2012.

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

- V. Ehrlacher, IPAM Materials Defects: Tutorials, Los Angeles, USA, September 2012.
- V. Ehrlacher, IPAM Workshop II: Atomistic and Mesoscale Modeling of Materials Defects, Los Angeles, USA, September 2012.
- V. Ehrlacher, IPAM Workshop III: Mesoscale and Continuum Scale Modeling of Materials Defects, Los Angeles, USA, September 2012.
- S. Lahbabi, 4th meeting of the GDR quantum dynamics, Toulouse, France, February 2012
- S. Lahbabi, Spectral days 212, Munich, Germany, April 2012
- S. Lahbabi, Summer school: Ab initio simulations in condensed matter, Les Houches, France, June 2012
- W. Minvielle, Summer school on "Recent advances in the Theory of Homogenization", Chicago, June 2012,

MUTANT Project-Team

8. Dissemination

8.1. Scientific Animation

8.1.1. Community Initiatives

The **Brillouin Seminar** series on *Information Geometry* is coordinated by MUTANT in partnership with LIX and THALES. It gathers 80 international researchers on the topic from various disciplines. In 2012, we organized 6 talks. Videos are available on the seminar website.

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

8.1.2. Editorial Boards

Jean-Louis Giavitto is the redactor-in-chief of **TSI** (Technique et Science Informatique), a french scientific journal published by Lavoisier and Hermes Science.

8.1.3. Participation in Program Committees of Conferences

Florent Jacquemard has been member of the program committees of the **6th International Joint Conference on Automated Reasoning** (IJCAR 2012), June 26th to July 1st, 2012, Manchester, UK, and of the **International Workshop on Trends in Tree Automata and Tree Transducers** (TTATT 2012), a satellite workshop of the **23rd International Conference on Rewriting Techniques and Applications** (RTA 2012), June 2, 2012, Nagoya, Japan.

Jean-Louis Giavitto was co-chair of the **Spatial Computing Workshop (SCW2012)** a satellite workshop of AAMAS, 5 June 2012, Valencia, Spain. He was also member of the Program Committees of: **AFADL 2012** (Approches Formelles dans l'Assistance au Développement de Logiciels, 11-13 January 2012, Grenoble), **IPCAT 2012** 9th International Conference on Information Processing in Cells and Tissues 31st March – 2nd April 2012, Trinity College, Cambridge, **GDS track at GECCO 2012**, the Generative and Developmental track at the Genetic and Evolutionary Computation Conference, 7–11 July 2012, Philadelphia, **FHIES 2012** Foundations of Health Information Engineering and Systems, an international symposium co-located with FM 2012, August 27-28, Paris, **MeCBIC 2012**, 6th Workshop on Membrane Computing and Biologically Inspired Process Calculi 8th September 2012, Newcastle.

8.1.4. Participation in Conferences

- José Echeveste, Jean-Louis Giavitto and Florent Jacquemard attended the **2012 International Computer Music Conference** (Ljubljana, Slovenia, 9-14 September) and gave a talk on fault tolerance and language extensions of *Antescofo* [15].
- Jean-Louis Giavitto attended the:
 - Journées du GDR GPL (comité de direction)
 - SCW 2012, Valencia Spain, 5 June 2012 (chair)
 - UCNC 2012, Orleans and gave a tutorial on MGS

8.1.5. Invited Talks

Arshia Cont gave an invited talk at the **Computer-Human Interactive Performance Symposium** in University City London (UCL) in June 2012.

Arshia Cont and Jean-Louis Giavitto gave an invited talk in the **Produce Time Symposium** in June 2012 at IRCAM.

Jean-Louis Giavitto:

- **tutorial on MGS** at the 11th International Conference Unconventional Computation and Natural Computation **UCNC 2012**, 37 September, Orléans.
- *Non-Standard Multiset*, for the mini symposium **Let's Imagine the Futur** for the retirement of Jean-Pierre Banâtre, 7–8 Novembre, Rennes.
- *Programmation spatiale : application à l'analyse des contes de fées et à l'analyse musicale*, **IPAC seminar**, 8th March, Nancy.
- *Le projet AutoChem*, presentation closing the ANR Blanc project, at the NAR Symposium, January 2012.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence :

- Arshia Cont, Audio Technology Review, 2h/week, 3rd year Bachelors, Conservatoire Nationale Supérieure de la Musique et de la Danse de Paris (CNSMDP), Métier du Son, Paris, France.

Master :

- Arshia Cont, Machine Learning for Music, 18h, Master ATIAM, Université Pierre et Marie Curie (UPMC), Paris, France.

8.2.2. Supervision

PhD : Arnaud Dessen, *Computational methods of information geometry with real-time applications in audio signal processing*, Université Pierre et Marie Curie (UPMC), December 2012, Arshia Cont (co-directed with Gérard Assayag, IRCAM).

PhD in progress :

- José Echeveste, Synchronous Languages for Computer Music Composition and Performance, Started September 2011, co-directed by Jean-Louis Giavitto and Arshia Cont.

8.2.3. Juries

- Arshia Cont participated in the defense committee for Augustin Lefèvre, “Dictionary learning methods for single-channel audio source separation”, ENS Cachan, September 2012.
- Arshia Cont participated in the defense committee for Mauricio Toro, “Structured Interactive Scores”, University of Bordeaux 1 (LaBRI), September 2012.
- Florent Jacquemard was a examiner for the PhD of Hédi Benzina, “Enforcing Virtualized Systems Security”, ENS Cachan (LSV), December 2012.
- Jean-Louis Giavitto was a reviewer for the thesis of:
 - Héctor Fernández, “Flexible Coordination through the Chemical Metaphor for Service Infrastructures”, University of Rennes 1 (IRISA), June 2012.
 - Jose David Fernández Rodríguez, “The Evolution of Diversity in the Structure and Function of Artificial Organisms”, Universidad de Maálaga, Spain, January 2012.

8.3. Popularization

8.3.1. Cultural Events, Highlights

The **Antescofo** software developed and maintained by the team, has been featured in various prestigious international events with the following highlights:

- 13 World-premiers for live electronics and instruments by international composers such as Kaija Saariaho, Philippe Manoury, Steve Coleman and Marco Stroppa including one opera. See **complete list**.
- More than 30 world-class public performances around the world including: Antescofo premier with *New York Philharmonics* (June 2012), Lucerne Festivale (August 2012), Salle Pleyel (September 2012), Warsaw Autumn Festival (September 2012), Royal Albert Hall in London (August 2012), Vienna Festwochen (June 2012), Opéra Comique de Paris (June 2012), and more.

See [partial list](#).

- Two [Giga-Hertz Prizes](#) for two pieces strongly featuring *Antescofo* (life-time award for Emmanuel Nunes' *Einspielung*, young category for Lara Morciano).
- A documentary movie on Antescofo produced by Inria. ([watch](#))

8.3.2. International Public Press

BBC Radio program featuring *Antescofo* on the occasion of a live performance in Royal Albert Hall.

8.3.3. National Public Press

Major public press mentions for *Antescofo* in 2012:

- *Antescofo: Au plus près de la partition*, Science et Avenir, July 2012.
- *L'ordinateur qui joue comme un musicien*, La recherche, June 2012.
- [Quand l'informatique maîtrise le temps de l'interprétation musicale](#), France Culture Online , July 2012.
- [Antescofo à l'avant-garde de l'informatique musicale](#), InterStices, November 2012.
- [Sous le signe du calcul](#) (with F. Reichenmann) in [DocSciences](#), special issue on “ Alan Turing : la pensée informatique ” (DocSciences is a journal for college students published by the Rectorat de Versailles), June 2012. Published also on the [InterStices](#) web site, September 2012.
- [À propos des nouveaux langages de programmation](#), audio podcast, InterStices, July 2012.

8.3.4. Exhibitions

- The *MuTant* team's *Antescofo* software was the demo feature for Inria's stand at the 13th exhibition for Mathematical Cultures and Games (Salon cultures et jeux mathématiques) in June 2012.
- *MuTant* members hold a stand during the “Fêtes de la science” on *Antescofo* at Inria Rocquencourt in October 2012.
- Jean-Louis Giavitto has participated to a public debate of the [Bar des Sciences](#) with G. Longo and G. Dowek on “Turing aurait 100 ans – De Turing au Qbit”, 7th November.
- Jean-Louis Giavitto has participated to a public debate following the projection of [Codebreaker: Alan Turing](#) with C. Villani, B. Chazelle and J. Lassègue at the movie theater Grand Action, 17th December.

PARKAS Project-Team

9. Dissemination

9.1. Scientific Animation

9.1.1. Event organization

- J. Vuillemin is member of the International Scientific Advisory Board of the National ICT Australia.
- J. Vuillemin chairs the Scientific Advisory Board of the national Institute for InfoCom Research I2R in Singapore.
- F. Zappa Nardelli is member of the “comité executif” of the CEA-EDF-Inria summer schools.
- F. Zappa Nardelli served in the POPL 2012 ERC.
- F. Zappa Nardelli is member of the "comité de suivi doctoral" de l’Inria Saclay.
- A. Cohen is the General Chair of the 7th HiPEAC conference, January 2012. Louis Mandel is member of the local arrangements committee. The conference pioneered a new “journal first” publication model, and has been completely reorganized into a large networking event with 27 parallel events, an industry exhibit with 50 companies booths and posters, and a European project exhibit with 46 projects from the computing systems, embedded systems strategic objectives of the FP7 and from the FET programme. 516 registered participants, 34 ACM TACO journal papers presented (the record number for previous HiPEAC conferences was 210 participants).
- M. Pouzet is in charge, with Catherine Dubois (IIE CNAM, Evry) of the national research group LTP (Language, Types, Proofs) of the French GDR GLP (“Génie de la Programmation et du Logiciel”). Two meetings a year with three invited speakers.
- M. Pouzet organised 18th edition of SYNCHRON (<http://synchron2011.di.ens.fr>), the workshop on Synchronous Programming and Applications, in Dec. 2011 in Damaris-les-lys. We got the record track of 80 participants and a special half-day devoted to synchronous programming for music applications with colleagues from IRCAM.

9.1.2. Editorial boards

- Jean Vuillemin is on the board of 5 international journals.
- Marc Pouzet is associate editor of the EURASIP Journal on Embedded systems (<http://jes.urasipjournals.com>).
- Marc Pouzet is “directeur de collection” for Hermes publisher.
- Albert Cohen is on the editorial board of the International Journal on Parallel Programming (IJPP, <http://www.springer.com/computer/theoretical+computer+science/journal/10766>).
- Albert Cohen is on the distinguished reviewer board of the ACM Transactions on Architecture and Code Optimization (TACO).

9.1.3. Program committees

- M. Pouzet is a member of the program committee of the following conferences: Design, Automation & Test in Europe (DATE 2012); Embedded Software (EMSOFT 2012); Complex Systems Design & Management (CSD&M) 2012; Approches Formelles dans l’Assistance au Développement de Logiciels (AFADL 2012); ACM Conf. on the Principles and Applications of Declarative Programming (PADL 2012), located with POPL;
- M. Pouzet is an expert reviewer for the Design Automation Conference (DAC) in 2012 and 2013.
- A. Cohen is the chair of the DAC 2013 ESS1 TPC subcommittee, and was the co-chair of the DAC 2012 ESS1&2 TPC subcommittee.

- A. Cohen is the program chair of ETAPS CC 2014.
- A. Cohen is a member of the program committee of the following conferences: ICS 2012, ETAPS CC 2013, PPOPP 2013 external review committee.
- A. Cohen is the co-general chair of the ICPP-EMS 2013 workshop (with ICPP).
- A. Cohen is a member of the program committee of the following workshops: IMPACT 2012 and 2013 (with HiPEAC), HiRES 2013 (with HiPEAC), GPGPU 2012 and 2013 (with ASPLOS), COSMIC 2013 (with CGO), PLC 2012 and 2013 (with IPDPS), ICPP-EMS 2012 (with ICPP).
- L. Mandel, member of the program committee of the Journées Francophones des Langages Appliqués (JFLA 2012).

9.1.4. Invited Presentations

- A. Cohen was a keynote speaker at the IMPACT 2013 workshop (with HiPEAC) “Adopt a Polyhedral Compiler!”, July 2011.
- A. Cohen gave an invited presentation at AMD Bangalore titled “Languages and Compilers for Productivity and Efficiency”, June 2012.
- A. Cohen gave a Priti Shankar seminar at the Indian Institute of Science, CSA department, titled “Polyhedral Compilation Off the Beaten Path”, June 2012.
- M. Pouzet gave an invited presentation at the Int. Conference on Complex Systems, Design & Management (CSDM), Dec. 2011.
- M. Pouzet gave an invited presentation at the “Séminaire MaMux”, IRCAM, Paris. Feb. 2012.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: “Systèmes” (L3), L. Mandel (42h), Université Paris-Sud 11, France

Licence: “Systèmes et réseaux” (L3), M. Pouzet (24h), L. Mandel (24h), École Normale Supérieure, France

Licence: “Langages de programmation et compilation” (L3), L. Mandel (24h), École Normale Supérieure, France

Master Parisien de Recherche en Informatique (MPRI): “Synchronous systems” (M2), M. Pouzet (12h), J. Vuillemin (6h), L. Mandel (6h), École Normale Supérieure and Université Paris Diderot, France

Licence: “From Algorithm to Circuit” (L3), J. Vuillemin (64h), École Normale Supérieure, France

Master Parisien de Recherche en Informatique (MPRI): “Semantics and tools for multicore programming” (M2), A. Cohen (9h), F. Zappa Nardelli (13.5h), École Normale Supérieure and Université Paris Diderot, France

Marc Pouzet is “responsable du concours d’entrée à l’ENS”, for the Computer Science department (since Sept. 2010).

Marc Pouzet is director of studies (directeur des études) of the Computer Science department (since Sept. 2012).

9.2.2. Supervision

M2: R. Morisset (ENS), Correctness of optimisations in the C11/C++11 memory model, september 2012;

M2: P. Pawan (IIT Kanpur, India), Hunting concurrency compiler bugs, september 2012;

M2: F. Gindraud (ENS Lyon), definition, code generation, and formal verification of a software controlled cache coherence protocol;

M2: B. Arnoux (École Polytechnique, Telecom ParisTech), globally adressable memory model for data-flow execution.

M1: C. Lecourt (École Polytechnique), numerical receipies and examples for Zélus.

M2: G. Baudart (École normale supérieure, Cachan), A synchronous semantics and implementation for Antescofo.

9.2.3. Juries

- A. Cohen was a reviewer of the following PhD theses: Nicolas Benoit (January 2012, Université de Versailles St-Quentin), Artur Pietrek (October 2012, Université Joseph Fourier), Mehdu Amini (November 2012, MINES ParisTech), Selma Saidi (November 2012, Université Joseph Fourier), Dmitry Nadezhkin (December 2012, Leiden University, The Netherlands).
- A. Cohen was a committee member of the following PhD theses: Delphine Demange (October 2012, École Normale Supérieure de Cachan – Université Européenne de Bretagne), Quentin Colombet (December 2012, École Normale Supérieure de Lyon).
- A. Cohen was a committee member of the following Habilitation theses: Gaël Thomas (December 2012, Université Pierre et Marie Curie), Cédric Bastoul (December 2012, Université Paris Sud).
- M. Pouzet was the President of the following PhD. thesis: Peter Schrammel (October 2012, Université de Grenoble).

9.3. Popularization

- L. Mandel and M. Pouzet, were invited to give a lecture at IRCAM in the Master of “Acoustique, Traitement du signal, Informatique, Appliqués à la Musique”. Nov. 2010, Nov. 2011, and Nov. 2012.

PI.R2 Project-Team

8. Dissemination

8.1. Scientific Animation

8.1.1. *Collective responsibilities*

Hugo Herbelin coordinated the ADT Coq and the development of Coq.

8.1.2. *Editorial activities*

Pierre-Louis Curien is co-editor in chief of Mathematical Structures in Computer Science, and is an editor of Higher-Order and Symbolic Computation.

8.1.3. *Program committees and organising committees*

Pierre-Louis Curien was member of the PC for ICALP 2012.

Pierre-Louis Curien, Yves Guiraud, Philippe Malbos and Alexis Saurin have been members of the organising and scientific committee of the Logic and Interactions weeks held in the CIRM, Marseille, in the first trimester of 2012.

Yann Régis-Gianas served on the PC for the conference “Journées Francophones des Langages Applicatifs” (2013).

Hugo Herbelin was in the PC of the conference ITP 2012 and MFCS 2012. He was in the PC of the TYPES 2011 conference post-proceedings.

Hugo Herbelin organised the “Automation in Proof Assistant” satellite workshop of ETAPS 2012 which was shared with the organisation of the first COST 0901 meeting of year 2012.

Matthieu Sozeau was in the PC of the MSFP’12 (colocated with ETAPS’12) and LFMTP’12 (colocated with ICFP’12) workshops. He was in the PC of the PLPV’12 workshop, colocated with POPL’12, for which he was an external reviewer as well. Matthieu Sozeau is in the PC of JFLA’13.

8.1.4. *Jury participation*

In June and July 2012, Alexis Saurin has been member of the Jury for entrance exams at ENS Paris and examined the candidates for the three ENS for the “Informatique Fondamentale” Oral exam.

In September 2012, Alexis Saurin has been member of the Jury for LMFI Master.

8.1.5. *Invited talks*

Matthieu Sozeau gave an invited lecture on type classes at JFLA’12 in Carnac (January 2012) and at U. Penn, in October 2012.

Pierre-Louis Curien was invited speaker at the annual meeting of the GDR Topologie et Applications, Lille (“Interprétation catégorique de la théorie des types : questions de cohérence”), in October 2012.

Pierre Letouzey gave an invited talk in the ML workshop in Copenhagen in September 2012, about the interactions between Coq and OCaml.

Alexis Saurin gave an invited talk at the ASL annual meeting held in Madison, Wisconsin, in April 2012 (special session on Structural Proof Theory and Computing).

8.1.6. *Presentation of papers*

Matthias Puech has presented his paper [25] at the TLDI 2012 workshop.

Yann Régis-Gianas has presented the paper [21] at the MIPS 2012 workshop (best paper award).

Pierre Boutillier has presented his paper at JFLA 2012.

Hugo Herbelin and Matthieu Sozeau have presented their papers at LICS 2012 in Dubrovnik, Croatia.

Hugo Herbelin has presented his joint paper with Zena Ariola, Paul Downen, Keiko Nakata and Alexis Saurin at FLOPS 2012 in Kobe, Japan.

8.1.7. Other presentations

Pierre Boutillier gave a talk at Logic and Interaction weeks in February.

Pierre Boutillier gave a talk about compiling Agda style dependent pattern-matching in CIC during AIPA workshop in Tallinn.

Jaime Gaspar gave talks at Colloquium Logicum 2012, Paderborn, in September, and Collegium Logicum 2012: Structural Proof Theory, at École Polytechnique, in November.

Tim Griffin gave the following presentations: “Mathematics of Inter-domain routing”, at Internet Engineering Task Force (IETF), Paris, March; “Routing in Equilibrium” for the “Paris Networking Group” (http://www.paris-networking.org/display_event.php?dispID=2221), Paris, and at Rencontres Francophones sur les Aspects Algorithmiques des Télécommunications (ALGOTEL) (<http://algotel2012.ens-lyon.fr>), Montpellier.

Hugo Herbelin gave a talk on his proof-as-program interpretation of dependent choice in classical logic to the Réalisabilité à Chambéry #5 workshop in June.

Hugo Herbelin gave a talk on his proof with side-effects of Gödel’s completeness theorem to the Workshop on Formal and Automated Theorem Proving and Applications (FATPA’12) held at the university of Belgrade.

Pierre-Marie Pédrot gave a presentation at the Logic and Interactions weeks in February, entitled “Double-glueing and orthogonality: refining models of linear logic through realizability”.

8.1.8. Talks in seminars

Nicolas Ayache gave a talk about the achievements of the CerCo project at the seminar of the ENSTA, at the seminar of the EPITA and at the “GT programmation”.

Pierre-Louis Curien gave a talk “De la logique classique (polarisée) à la logique linéaire (tensorielle)” at the Groupe de Travail Sémantique des calculs classiques, PPS, Paris 7, in November.

Pierre-Louis Curien gave talks on “System L syntax for sequent calculi” at the University of Bath, in February, at the École Polytechnique, in May, and at the Institute of Cybernetics, Tallinn, in December.

Jaime Gaspar gave talks at the Seminar of the Deducteam team, and at the Mathematical Logic Seminar, Lisbon.

Tim Griffin gave the following talks: “Routing in Equilibrium”, University of Rome-3, April; “Routing in Equilibrium with help from ssreflect”, Marelle team at École Polytechnique, May; “Mathematics of Routing”, DIMACS working group on Abstractions for Network Services, Rutgers University, New Jersey, in May; “Mathematics of Routing”, Université d’Évry, in June.

Yves Guiraud gave two talks on “Théorie de Squier et résolutions polygraphiques” at the Groupe de Travail Catégories supérieures, polygraphes et homotopie, PPS, Paris 7, in June.

Hugo Herbelin gave a talk on the formalisation of semi-simplicial sets in type theory at the Univalent Foundations seminar of the Institute for Advanced Study, Princeton, NJ, in December.

Guillaume Munch-Maccagnoni gave a talk about “Runnable monads in models of the λ calculus” at the ANR Logoi meeting in Luminy, in June.

Guillaume Munch-Maccagnoni gave a talk “On the computational contents of an involutive negation” at the Groupe de Travail Sémantique des calculs classiques, PPS, Paris 7, in November.

Pierre-Marie Pédrot gave a talk on a “Dependent delimited control monad” at the working group of the “Logique de la Programmation” team, from Institut Mathématique de Luminy, in December.

Matthieu Sozeau gave a talk in Tallinn about “Equations: A Dependent Pattern-Matching Suite” in June 2012.

Matthieu Sozeau gave a talk and a tutorial on “Coq with Classes” at the Institute for Advanced Study, Princeton, NJ in October and December 2012.

Matthieu Sozeau gave a talk about “Universe Polymorphism and Inference in Coq” at the Institute for Advanced Study, Princeton, NJ in December 2012.

8.1.9. Attendance to conferences, workshops, schools,...

Pierre Boutillier attended the Journées Francophones des Langages Applicatifs, Carnac, in February.

Tim Griffin attended the *ssreflect*/Inria MAP Spring School, Sophia Antipolis, in March.

Hugo Herbelin attended the FATPA workshop at the University of Belgrade in January.

Hugo Herbelin attended the ETAPS 2012 conference and the AIPA workshop in Tallinn in March-April.

Hugo Herbelin attended the FLOPS 2012 conference in Kobe in May.

Hugo Herbelin attended the ITP 2012 conference at Princeton University in August.

Hugo Herbelin attended the Coq workshop 2012 at Princeton University in August.

Guillaume Munch-Maccagnoni attended APLAS, Kyoto, in December.

Matthias Puech attended POPL 2012 in January.

Yann Régis-Gianas attended FMICS 2012, Paris, in August.

Matthieu Sozeau attended the POPL 2012 conference in January.

Matthieu Sozeau attended the JFLA 2012 conference in February.

8.1.10. 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. Yves Guiraud took over from Hugo Herbelin for the organisation of the seminar while Hugo was at IAS (October-December).

The web site is <http://www.pps.univ-paris-diderot.fr/gdt-types-realisabilite>. The programme in 2012 included talks by Pierre-Louis Curien, Arnaud Spiwack, Hugo Herbelin, Matthias Puech, Pierre Boutillier (twice), Federico Aschieri, Jaime Gaspar, Pierre-Marie Pédrot, François Bobot.

8.2. Teaching - Supervision - Jury participation

8.2.1. Teaching

(We do not include here the standard teaching duties of Pierre Letouzey and Yann Régis-Gianas as “Maîtres de conférences”.)

Licence: Pierre Boutillier is teaching assistant at University Paris 7. He taught this year Unix-system (beginner), algorithms and databases (beginner in the bioinformatics master).

Licence: Matthias Puech has a temporary research and teaching position (A.T.E.R) at University Paris 7 for the academic year 2012–2013. He teaches this year logic (L2) and functional programming (L3) and abstract machines (L3).

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

Master: Alexis Saurin taught the LMFI course entitled “Lambda-calcul et preuves” together with Thomas Ehrhard (January-May). Each of them taught half of this 48H master course.

Master: Pierre-Louis Curien gave a 10 hours course at the Department of Computer Science of the University of Oregon on proof theory (May).

Doctorat: Pierre-Louis Curien gave lectures at the 11th Oregon Summer School on Programming Languages (July).

Training: Pierre Letouzey participated to a training program for high-school teachers, introducing them to computer science. These teachers are meant to participate later to the new “Spécialité” ISN (Informatique et Sciences du Numérique) in “Terminale” grade.

8.2.2. Supervision

Internship: Yann Régis-Gianas supervised the internship of François Ripault.

Internship: Yann Régis-Gianas supervised the internship of Arthur Guillon.

PhD: Matthias Puech, Certificates for incremental type checking, Università di Bologna et Université Paris 7, December 2012, Hugo Herbelin, Andrea Asperti, and Yann-Régis Gianas.

PhD in progress: Pierre Boutillier, Représentation des effets et inférence de type dans le cadre du développement d’un langage de programmation à types riches, September 2010, Hugo Herbelin.

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

PhD in progress: Guillaume Munch-Maccagnoni, Polarités, réalisabilité classique, contrôle délimité, September 2009, Pierre-Louis Curien and Thomas Ehrhard.

PhD in progress: Pierre-Marie Pédrot, Types dépendants et linéarité, October 2012, Hugo Herbelin and Alexis Saurin.

PhD in progress: Guillaume Claret, October 2012, Yann Régis Gianas.

8.2.3. PhD or habilitation jury participation

Pierre-Louis Curien was a referee for the PhD theses of Martin Churchill (“Imperative programs as proofs via game semantics”, Univ. of Bath), Benedikt Ahrens (“Initiality for typed syntax and semantics”, Université Nice Sophia Antipolis), Silvia Vecchiato (“Semantics of CBN dual proofs into control categories”, Università di Siena), and Thomas Seiller (“Logique dans le facteur hyperfini: Géométrie de l’interaction et complexité”, Université Aix-Marseille). He was member of the habilitation jury of Micaela Mayero (“Problèmes critiques et preuves formelles”, Université Paris 13).

8.3. Popularisation

Yann Régis-Gianas organised the “Fête de la Science” event for the computer science department of the University Paris 7. François Bobot, Guillaume Claret, Lourdes Gonzalez-Huesca and Pierre-Marie Pédrot also took part in the animation.

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 co-organised the “Robocup”, a robotic and programming contest between undergraduate students of three universities of Paris (UPD, UP13, UP5).

Pierre Letouzey and Pierre Boutillier took part in the animation of the “Fête de la science” event at Inria Rocquencourt.

Yann Régis-Gianas gave one of the lectures to high-school teachers of the Académie de Paris in the context of the new curriculum “Informatique et Science du Numérique” (ISN).

POLSYS Project-Team

9. Dissemination

9.1. Scientific Animation

Elias Tsigaridas visited the Computer Science Department of Aarhus University, Denmark (28 May - 3 June) and gave a talk on random polynomials. He participated in ISSAC 2012 (July 22-25, 2012) in Grenoble, France and gave a talk on real solving polynomials with coefficients in multiple extension fields. He visited (23 Oct – 4 Noe) the Chinese Academy of Sciences, Beijing, China, as an invited speaker for the workshop Computational Geometry of the Asian Symposium on Computer Mathematics (ASCM), where he gave a talk on “Univariate Real Root Isolation in Extension Field and Applications to Topology of Curves”. During his stay in China, he was also invited to give a talk at Institute of Software of the State Key Lab of Computer Science, about random polynomials. He was invited at the Department of Applied Mathematics, Univ. of Crete, Greece (15 Jun – 2 Jul) and gave a talk at the department’s seminar about random polynomials. He participated and gave a talk in 7th Athens Colloquium on Algorithms and Complexity (ACAC) in Athens, Greece (27–28 July) on solving polynomials with coefficients on an extension field. He participated in the conference Computer Algebra in Scientific Computing (CASC) that was held in September 3 - 6, at Maribor, Slovenia. He visited in the North Carolina State University, USA (15 – 20 Oct) where he gave a talk at the Department’s Symbolic Computation seminar with title “Real algebraic geometry and stochastic games”. He participated in the Mathematics, Algorithms and Proofs 2012 (MAP) workshop of the GEOLMI ANR project (Univ. Konstanz, Germany, September 17 - September 21, 2012). Finally, he was invited to give a talk in the X-mas seminar of the ERGA lab of the Dept. of Informatics, Univ. of Athes, Greece (27 December 2012) on real solving polynomials in the presence of logarithms.

J.C. Faugère was invited to give an invited talk in the international workshop on efficient linear algebra for Gröbner basis computation in Kaiserslautern. J.C. Faugère visited the Mathematics Department of the North Carolina State University and give a talk at the Computer Science Department of Duke University (USA). J.-C. Faugère, is member of the MEGA Advisory Board.

D. Wang is member of the editorial board of:

- 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 in China (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).
- Editor for the Book Series in Computational Science (published by Tsinghua University Press, Beijing).

L. Perret co-organized with C. Cid the Ecrypt II Summer School on Tools (Mykonos, Greece, 28 May - 1 June 2012 <https://www.cosic.esat.kuleuven.be/ecrypt/courses/mykonos12/>).

J.-C Faugère, and G. Renault delivered an invited talk at the Ecrypt II Summer School on Tools (Mykonos, Greece, 28 May - 1 June 2012 <https://www.cosic.esat.kuleuven.be/ecrypt/courses/mykonos12/>).

J.-C Faugère was the programm chair of third international conference on Symbolic Computation and Cryptography (SCC 2012) (International Centre for Mathematical meetings (CIEM), Castro Urdiales, 11-13 July 2012, <http://scc2012.unican.es/>).

L. Perret was in the programm committee of SCC'12.

J.-C Faugère and L. Perret were in P.C. of the YACC'12 conference (September 24 – September 28, 2012, Porquerolles Island, France, <http://yacc.univ-tln.fr/category/yacc-2012/>).

L. Perret was in the programm committee of International Conference on Practice and Theory in Public-Key Cryptography (PKC'2013) (Nara, Japan, February 26 - March 1, 2013, <http://ohta-lab.jp/pkc2013/>

J.-C Faugère and L. Perret are in the programm committee of Symbolic Computations and Post-Quantum Cryptography Online Seminar organised by the Stevens Institute (USA, <http://www.stevens.edu/algebraic/SCPQ/>)

J.-C Faugère and L. Perret are guest editors of a Special issue of Journal of Symbolic Computation on "Mathematical and Computer Algebra Techniques in Cryptology" (in progress)

M. Safey El Din is member of the editorial board of Journal of Symbolic Computation. He was member of the Programm committee of CASC 2012. He visited the department of Computer Science at the Univ. of Western Ontario in February 2012 and Sept. 2012. With J.-C. Faugère, L. Perret and E. Tsigaridas, he visited the Symbolic Computation Group at North Carolina State University in October 2012. He was member of the National Council of Universities until Sept. 2012. Since Nov. 2012, he is the head of the Scientific Computing Department of LIP6. He has been nominated at the Institut Universitaire de France.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : Ludovic Perret, Introduction à la Sécurité, 140 heures équivalent TD, niveau M1, Univ. Pierre-et-Marie-Curie, France

Master : J. Berthomieu, Modeling and numerical and symbolical resolutions of problems via MAPLE and MATLAB systems, 14 heures équivalent TD, niveau M1, Univ. Pierre-et-Marie-Curie, France

Master : J. Berthomieu, Linear Algebra and Applications, 35 heures équivalent TD, niveau M1, Univ. Pierre-et-Marie-Curie, France

Master : Guénaël Renault, Algèbre Linéaire et Applications, 35 heures équivalent TD, niveau M1, Univ. Pierre-et-Marie-Curie, France

Master : Guénaël Renault, Cryptologie Appliquée, 70 heures équivalent TD, niveau M2, Univ. Pierre-et-Marie-Curie, France

Master : Guénaël Renault, co-head of the speciality on "Sécurité, Fiabilité et Performance Numérique" in the Computer Science Master Program, niveaux M1-M2, Univ. Pierre-et-Marie-Curie, France

Master : M. Safey El Din, Modeling and numerical and symbolical resolutions of problems via MAPLE and MATLAB systems, 21 heures équivalent TD, niveau M1, Univ. Pierre-et-Marie-Curie, France

Master : M. Safey El Din, Polynomial Systems, Computer Algebra and Applications, 17 heures équivalent TD, niveau M2, Master Parisien de Recherche en Informatique, France

9.2.2. Supervision

PhD : Christopher Goyet, Cryptanalyse algébrique par canaux auxiliaires, Univ. Pierre-et-Marie-Curie, 7 novembre 2012, J.-C. Faugère, G. Renault

PhD : Pierre-Jean Spaenlehauer, Résolution de systèmes multi-homogènes et déterminantiels: algorithmes, complexités et applications, Univ. Pierre-et-Marie-Curie, 9 octobre 2012, J.-C. Faugère, M. Safey El Din

PhD in progress : Jules Svartz, Solving polynomial systems with symmetries, inscription octobre 2011, J.-C. Faugère

PhD in progress : Louise Huot, Étude des systèmes polynomiaux en cryptologie sur les courbes, Univ. Pierre-et-Marie-Curie, inscription octobre 2010, J.-C. Faugère, G. Renault

PhD in progress : Rina Zeitoun, Cryptologie sur cartes a puces et methodes algebriques, Univ. Pierre-et-Marie-Curie, inscription mars 2012, J.-C. Faugère, G. Renault

PhD in progress : Frederic Urvoy de Portzamparc, Cryptanalyse algébrique et étude de la sécurisation contre les attaques physiques des primitives fondées sur la théorie des codes, inscription février 2012, J.-C. Faugère, L. Perret

PhD in progress : Simone Naldi, Algorithmes de la géométrie algébrique réelle pour la théorie du contrôle, Univ. Paul Sabatier (Toulouse), inscription octobre 2012, D. Henrion, M. Safey El Din

9.2.3. Juries

J.-C. Faugère was member of 4 committees: 3 Prof. (UPMC, Montpellier, Rouen) and 1 MdC (UPMC).

9.3. Popularization

J.-C. Faugère gives a talk at Dassault Systèmes on applications of Gröbner Bases to industrial problems.

POMDAPI Project-Team

6. Dissemination

6.1. Scientific Animation

- C. Japhet was in the local organization committee for the 21st International Conference on Domain Decomposition Methods, Rennes, 25-29 June 2012.
- C. Japhet and M. Kern have organized a minisymposia on Domain decomposition for porous media flow and transport at the 21st International Conference on Domain Decomposition Methods, Rennes, 25-29 June 2012.
- C. Japhet and Y. Maday (UPMC-Paris 6) have organized a minisymposia on Domain decomposition with mortars at the 21st International Conference on Domain Decomposition Methods, Rennes, 25-29 June 2012.
- M. Kern is Deputy Director of **Maison de la Simulation**, a joint project between CEA, CNRS, Inria, University Paris Sud and University of Versailles, focused on applications of high end computing.
- M. Kern is Program Director of the SIAM Activity Group on Geosciences, and is co-chair (with M. Putti, University of Padova) of the SIAM Conference on Mathematical and Computational Issues in the Geosciences (to be held June 17-20, 2013 in Padova, Italy).
- M. Kern was part of the program committee for the 21st International Conference on Domain Decomposition Methods, Rennes, 25-29 June 2012.
- J. E. Roberts is a member of the External Advisory Board for **CFSES** (Center for Frontiers of Subsurface Energy Security).
- J. E. Roberts organized (with Z. Mghazli and H. Ben Ameer) the mini symposium “Problems in porous media: modeling and solving techniques” at the SM2A conference, 10-13 September 2012, Marrakech, Morocco.
- 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.
- J. E. Roberts was a member of the Scientific Committee and the Prize Committee for the Interpore 2012 conference, May 14-16, West Lafayette, Indiana, USA. For this conference she also organized the 3 session mini-symposium “Numerical modeling for flow in fractured and other heterogeneous porous media”.
- J. E. Roberts was a member of the Nominating Committee for Officers of the SIAM Activity Group Geosciences.

6.2. Teaching - Supervision - Juries

6.2.1. Teaching

- Licence : I. Ben Gharbia, *Analyse numérique et calcul scientifique*, 78 h, L2, Université Paris–Dauphine, France.
- Licence : I. Ben Gharbia, *Mathématiques 5*, 54 h, L3, Université Panthéon–Assas, France.
- Licence : I. Ben Gharbia, *Mathématiques 1*, 18 h, L1, Université Panthéon–Assas, France.
- Licence : I. Ben Gharbia, *Statistiques 1*, 18 h, L1, Université Panthéon–Assas, France.
- Licence : F. Clément, *Calcul différentiel*, 17 h, L3, Mines ParisTech, France.

Master: J. Ch. Gilbert, *Optimisation différentiable – Théorie et algorithmes*, 42 h, M1, ENSTA ParisTech, France.

Master: M. Kern, *Éléments finis*, 30 h, M1, Mines ParisTech, France.

Master: M. Kern, *Problèmes inverses*, 26 h, M1, Mines ParisTech, France.

Master: J. Jaffré et J. E. Roberts, *Volumes finis et éléments finis mixtes*, 20 h, M2, École Nationale d'Ingénieurs de Tunis (ENIT), Tunisia.

Master: J. E. Roberts, *Approximation methods*, 20 h, M1, École Supérieure d'Ingénieurs Léonard de Vinci, France.

6.2.2. Supervision

PhD: Ibtihel Ben Gharbia, *Résolution de Problèmes de Complémentarité – Application à un Écoulement Diphasique Dans un Milieu Poreux*, Université Paris-Dauphine, 5th of December 2012, supervision J. Ch. Gilbert and J. Jaffré.

PhD : Nancy Chalhoub, *Estimations a posteriori pour l'équation de convection–diffusion–réaction instationnaire et applications aux volumes finis*, Université Paris-Est, 17 décembre 2012, Alexandre Ern (Université Paris-Est), Toni Sayah (Université Saint Joseph, Liban), Martin Vohralík.

PhD: Alice Chiche, *Théorie et Algorithmes Pour la Résolution de Problèmes d'Optimisation de Grande Taille – Application à la Gestion de Production d'Électricité*, Université Pierre et Marie Curie, 28th of June 2012, supervision J. Ch. GILBERT.

PhD in progress: Soleiman Yousef, *Estimations d'erreur a posteriori et adaptativité pour le problème de Stefan*, septembre 2009, Vivette Girault (Université Pierre et Marie Curie), Martin Vohralík.

PhD in progress: Carole Henry, *Adaptation de maillage et contrôle d'erreur a posteriori pour récupération d'huile assistée*, septembre 2009, Vivette Girault (Université Pierre et Marie Curie), Martin Vohralík.

PhD in progress: Paul-Marie Berthe, *Méthode de décomposition de domaines espace-temps pour la mécanique des fluides*, septembre 2009, Pascal Omnes (CEA, Université Paris 13), Caroline Japhet.

PhD in progress: Hoang PHUONG THI THAO, *Space Time Domain Decomposition Methods for Transport in Porous Media*, University Pierre et Marie Curie, October 2010, supervision: Jean E. Roberts, Caroline Japhet, Michel Kern.

PhD in progress: Mohamed Hedi Riahi, *Identification de paramètres hydrogéologiques dans un milieu poreux*, Ecole Nationale d'Ingénieurs de Tunis and University Pierre et Marie Curie, October 2011, supervision: Jérôme Jaffré and Hend Ben Ameer.

PhD in progress: Fatma Cheikh, *Identification de failles dans un milieu poreux par une méthode d'indicateurs*, Ecole Nationale d'Ingénieurs de Tunis and University Pierre et Marie Curie, October 2011, supervision: Jean E. Roberts and Hend Ben Ameer.

PhD in progress: Elyes Ahmed, *Méthodes numériques pour la simulation d'écoulements diphasiques dans un milieu poreux fracturé*, Ecole Nationale d'Ingénieurs de Tunis, October 2011, supervision: Jean E. Roberts and Amel Ben Abda.

6.2.3. Juries

- Martin Vohralík a été rapporteur de la thèse de Florent Pled (*Vers une stratégie robuste et efficace pour le contrôle des calculs par éléments finis en ingénierie mécanique*, ENS Cachan, directeur de thèse Pierre Ladevèze), soutenue le 13 décembre 2012.
- Jérôme Jaffré a été rapporteur de la thèse de Merline Flore Djouwe Meffeja (*Simulation et modélisation de milieux granulaires confinés*, université de Rennes I, directeurs de thèse Patrick Richard et Edouard Canot), soutenue le 20 janvier 2012.
- Jérôme Jaffré a été aussi rapporteur de la thèse de Alessio Fumagalli (*Numerical Modelling of Flows in Fractured Porous Media by the XFEM Method*, Politecnico di Milano, directeur de thèse Luca Fromaggia), soutenue le 8 mai 2012.

- Jean E. Roberts a été rapporteur de la thèse de Xavier Tunc (Université de Provence, Marseille, directeur de thèse Thierry Gallouet), soutenue le 15 février 2012.

6.3. Popularization

- Creation of articles on Wikipedia.fr [19].
- Seminar on “Mathématiques pour modéliser les eaux souterraines” at “Faites de la Science” (M. Kern).
- Two seminars at the German-French worksop, October 18-19, Fellbach, Germany: J. Jaffré, “Mathematics for computing on a computer: The computer does not calculate exactly”, J. E. Roberts, “Mathematics and simulation of subsurface flow”.

PROSECCO Project-Team

9. Dissemination

9.1. Editorial Boards

- *International Journal of Applied Cryptography (IJACT)* – Inderscience Publishers, Associate Editor: Bruno Blanchet

9.2. Organizers

- Dagstuhl Analysis of Security APIs, November: Graham Steel
- ASA-6, Satellite of CSF, June: Graham Steel

9.3. Program Committees

- FCC – June 2012, Cambridge, MA, USA: Bruno Blanchet
- FM – August 2012, Paris, France: Bruno Blanchet
- CCS – October 2012, Ralleigh, NC, USA: Bruno Blanchet
- POST – March 2013, Rome, Italy: Bruno Blanchet
- PROOFS workshop - September 2012, September 2012: Graham Steel
- ACM SAC - Security Track 2012: Graham Steel

9.4. Vulnerability Reports

- R. Bardou and G. Steel (and their co-authors) found a series of vulnerabilities in cryptographic devices, resulting in a research paper and significant press coverage.
- K. Bhargavan and C. Bansal reported single sign-on vulnerabilities in Facebook, Yahoo, Helios and ConfiChair. These vulnerabilities were fixed on their recommendations, and the Prosecco team name was given credit on their websites.
- K. Bhargavan and A. Delignat-Lavaud reported encryption-related vulnerabilities in several commercial software packages, including 1Password, Roboform, LastPass, SpiderOak, and Wuala. These vulnerabilities were fixed on their recommendations and the Prosecco team was given credit on their websites.
- K. Bhargavan reported a CSP-related security vulnerability in Firefox, resulting in a security update.
- A. Delignat Lavaud reported a iframes-related security vulnerability in Firefox, resulting in a security update.

9.5. Teaching

- Karthikeyan Bhargavan taught TDs in computer science at Ecole Polytechnique, France
- Graham Steel taught invited Master's lectures at University of Venice, Italy
- Bruno Blanchet taught Master's lectures at the MPRI, France

9.6. Ph.D in progress

- David Cadé
Computationally Proved Implementations of Security Protocols, since September 2009, supervised by Bruno Blanchet

- Miriam Paiola
Automatic Verification of Group Protocols,
since November 2010, supervised by Bruno Blanchet
- Robert Künnemann, *Secure APIs and Simulation-Based Security*, Started Oct. 2010, supervised by Steve Kremer (CASSIS) and Graham Steel
- Gavin Keighren, *A Type System for Security APIs*, since 2007 (to submit March 2013), advisors Graham Steel and David Aspinall (University of Edinburgh). Graham is now at EPI Prosecco.

9.7. Ph.D/Habilitation Committees

- Vincent Cheval – Ph.D. – 3 Dec. 2012 – ENS Cachan
Automatic verification of cryptographic protocols: privacy-type properties
Bruno Blanchet

9.8. Invited Talks

- Workshop on Computed-Aided Security, Grenoble, France, January: Bruno Blanchet
- ETAPS unifying invited speaker, Tallinn, Estonia March: Bruno Blanchet
- Workshop on Formal and Computational Cryptographic Proofs, Cambridge, UK (April): Bruno Blanchet
- Alan Turing Year workshop: Is Cryptographic Theory Practically Relevant?, Cambridge, 31 January - 2 February: Graham Steel
- PROOFS workshop, satellite of CHES, September: Graham Steel
- DIGITEO Forum, Ecole polytechnique November: Graham Steel
- Ruhr University Bochum Seminar, June: Graham Steel

9.9. Participation to Workshops and Conferences

- Workshop on Computed-Aided Security – January 2012, Grenoble, France: Bruno Blanchet, David Cadé, Miriam Paiola
- CryptoForma – March 2012, UK: Alfredo Pironti
- ETAPS – March 2012, Tallinn, Estonia]: Bruno Blanchet, David Cadé, Miriam Paiola
- Workshop on Formal and Computational Cryptographic Proofs – April 2012, Cambridge, UK: Bruno Blanchet
- IEEE S&P – May 2012, San Francisco, USA: Graham Steel
- CSF, FCC, ASA – June 2012, Cambridge MA, USA: Bruno Blanchet, David Cadé, Miriam Paiola, Graham Steel, Robert Künnemann, Karthikeyan Bhargavan, Romain Bardou
- Usenix Security – August 2012, Bellevue WA, USA: Karthikeyan Bhargavan, Antoine Delignat-Lavaud
- ARES – August 2012, Prague, Czech Republic: David Cadé
- CRYPTO – August 2012, Santa Barbara, USA: Graham Steel, Romain Bardou
- PROOFS – September 2012, Leuven Belgium: Graham Steel, Evmorfia-Iro Bartzia, Miriam Paiola
- MSR-Inria Workshop – November 2012, Cambridge UK: Karthikeyan Bhargavan, Alfredo Pironti

RAP Project-Team

7. Dissemination

7.1. Leadership within scientific community

Nicolas Broutin organized a workshop on Models of Sparse Random Graphs and Network Algorithms that was held at the Banff International Research Station, Canada, in February. He organized a session on "probability and statistics on graphs" at the XII Latin American Congress on Probability and Mathematical Statistics (CLAPEM), Vina del Mar, Chile. He has been co-organizer and co-chair of the program committee for the international meeting on Analysis of Algorithms that took place at the CRM in Montreal in June 2012.

Christine Fricker is member of the jury of agrégation.

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. He has been a member of the technical programme committee of the conference ICCCN (2012).

James Roberts is a Fellow (membre émérite) of the SEE. In 2012, he has been a member of the technical programme committee of the following conferences: NOMEN, CoNext, ITC.

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 also gave a series of tutorials on the continuum random tree at the Adama summer school in Mahdia, Tunisia.

Mathieu Feuillet is teaching assistant for the course "Traffic, Queueing and Networks" given by Thomas Bonald at Telecom ParisTech. He defended his PhD thesis intitled *Bandwidth allocation in large stochastic networks*. He received the Gilles Kahn Award for his thesis.

Emanuele Leoncini is teaching assistant at the University Pierre et Marie Curie.

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. He was a reviewer of the PhD document of S. Malik (UPMC) and P. Keller (Universität Potsdam).

James Roberts was reviewer for the thesis defense of Massimo Gallo (EDITE), Addisu Tadesse Eshete (NTNU, Norway), Pedro Aranda (U. Paderborn, Germany); he was committee member for the HDR of Mai Trang Nguyen (EDITE). He was member of the appointment committee at KTH (Sweden) for the promotion to Assistant Professor of G. Dan.

7.3. Conference and workshop committees, invited conferences

Nicolas Broutin has given lectures at the annual meeting of ANR Boole, the A3 congress at the CIRM, and the invited session on "spatial stochastic models" at the World Congress in Probability and Statistics. He has presented his results at the Probability seminar at McGill, the Séminaire Combinatoire Philippe Flajolet at IHP, and the Algo lunch at UL in Brussels. He has been invited talk at the Oberwolfach Meeting on "scaling limits for models of statistical physics". *Nicolas Broutin* has participated to workshops on "probabilistic combinatorics" at McGill Bellair's intitute, and on "interaction stochastic/computational geometry" organized in Cluny by the ANR Presage. He has visited the computer science department of UL in Brussels. *Nicolas Broutin* has submitted his HDR, the defense will take place in January 2013.

Mathieu Feuillet gave a talk at the conference ALEA 2012 in Marseille (March 2012).

Christine Fricker gave a talk at the conference AofA in Montreal (June 18 2012).

Emanuele Leoncini gave a talk in the RAP team seminar at Inria Rocquencourt (November 2012), an invited talk at the CMAP at Ecole Polytechnique (November 2012). *Mathieu Feuillet* and *Emanuele Leoncini* are in the organizing committee of the “Junior Seminar” at Inria Rocquencourt. *Emanuele Leoncini* participated to the “Journées ALÉA 2012” (March 2012) at CIRM in Marseilles.

James Roberts gave invited talks at Technicolor (April), BCAM Bilbao (June), ATT Labs (Sept), Bell Labs Murray Hill (Sept), KTH Stockholm (Oct), NTNU (Nov). He presented papers at NOMEN 2012 (March) and ITC (Sept).

Philippe Robert gave a set of 5 lectures at BCAM (Bilbao) on fluid limits (January 2012) and a talk at the ICERM, Brown University, Providence (October 2012).

Nada Sbihi presented a paper at Infocom (March).

REGAL Project-Team

8. Dissemination

8.1. Scientific Animation

Luciana Arantes is:

- co-chair of P2PDep: 1st Workshop on dependability on P2P systems in conjunction with EDCC 2012.
- PC member of ICPADS 2012, LADC 2013, P2P-DEP 2012, GPC 2013.
- Reviewer for Journal of Parallel and Distributed Computing (JPDC) and Future Generation Computer System

Bertil Folliot is:

- Member of the "Executive Committee" of GdR ASR (Hardware, System and Network), CNRS.
- Elected member of the IFIP WG10.3 working group (International Federation for Information Processing - Concurrent systems).
- Member of the "Advisory Board" of EuroPar (International European Conference on Parallel and Distributed Computing), IFIP/ACM.
- Member of the "Steering Committee" of the International Symposium on Parallel and Distributed Computing" (ISPDC).
- PC member of ISPDC 2011, ISPDC 2012, ISPDC 2013.

Maria Potop-Butucaru is:

- Member of PC of ICDCS 2012 (IEEE 32nd International Conference on Distributed Computing Systems)
- Member of PC of SSS 2012(13th International Symposium on Stabilization, Safety, and Security of Distributed Systems), co-chair track Self-Stabilization

Olivier Marin is:

- Reviewer for Distributed Computing, and Techniques et Sciences Informatiques.
- Member of the scientific committee of LIP6.

Sébastien Monnet is:

- Elected member of the administrative committee of LIP6.
- Member of the program committee of the 1st IEEE International Conference on Cloud Networking, CloudNet, Paris, November 2012.

Gilles Muller is:

- Distributed OS and Middleware track co-chair of ICDCS 2012
- Poster chair of DSN 2012
- PC member of SYSTOR 2012
- PC member of ICDCN 2013
- PC member of EuroSys 2013
- Member of "Comité de selection" of INSA de Lyon (Professeur) and University of Rennes (Professeur)
- Management Committee Substitute Member for the COST action "Transactional Memories: Foundations, Algorithms, Tools, and Applications (Euro-TM)" and leader of the working group on "Hardware's and Operating System's Supports"
- Reviewer for the Flanders Research Foundation
- Reviewer for the Swiss National Science Foundation
- Member of IFIP WG 10.4 (Dependability)

Julia Lawall is:

- Chair of the steering committee of Generative Programming and Component Engineering (2011, 2012)
- Secretary of IFIP TC2 (since 2011)
- Member-at-large of the SIGPLAN Executive Committee
- Member of the editorial board of Science of Computer Programming
- Associate editor of Higher Order and Symbolic Computation
- PC member of 21st International Conference on Compiler Construction (CC 2012)
- PC member of Modularity: AOSD 2012
- PC member of OOPSLA 2012
- PC member of OBT: Underrepresented Problems for PL Researchers, with POPL 2012
- PC member of PPDP 2012
- Invited reviewer for PLDI 2012
- Member of IFIP WG 2.11 (Program Generation)

Franck Petit is:

- Vice Chair for the Special Journal Issue (TCS) of Track “Distributed Computing” of ICDCN 2013, IEEE 33rd International Conference on Distributed Computing and Networking, Mumbai, India, janvier 2013.
- PC Member of Renpar’21, 21st Rencontres francophones du Parallélisme, Grenoble, France, janvier 2013.
- PC Member of SSS 2012, 14th International Symposium on Stabilization, Safety, and Security of Distributed Systems, ed. LNCS, Toronto.
- PC Member of ICDCN 2012, 32nd International Conference on Distributed Computing and Networking, Hong Kong, China.
- Invited Editor for TCS, Theoretical Computer Science Special Issue on Stabilization, Safety, and Security of Distributed Systems 2011.
- Invited Editor for TCS, Theoretical Computer Science Special Issue on Stabilization, Safety, and Security of Distributed Systems 2011.
- Co-chair of Department “Networks and Distributed Systems” of LIP6 Laboratory.
- Member of “Vivier d’experts” and member of “Comité de selection” of UPMC Paris 6.

Pierre Sens is:

- co-Chair of P2P-Dep 2012 (1st Workshop on P2P and Dependability in conjunction with EDCC 2012)
- Member of PC of ICDCS 2012 (IEEE 32nd International Conference on Distributed Computing Systems)
- Member of PC of of EDCC’2012 (9th European Dependable Computing Conference)
- Member of PC of of IPDPS’2013 (IEEE International Parallel & Distributed Processing Symposium)
- Member of "Directoire de la recherche" of University Pierre et Marie Curie.
- vice-chair of LIP6 Laboratory.
- Member of the scientific council of AFNIC.
- Member of the scientific committee of LIP6.
- Member of the evaluation committee of the Digiteo DIM LSC program.
- Member of "Comité de selection" of Universities of Grenoble and Paris XI.

Marc Shapiro is:

- Member of Advisory Board for CITI, the Research Center for Informatics and Information Technologies of UNL, the New University of Lisbon (Portugal).
- Member of the steering committee for the LADIS workshop (Large-Scale Distributed Systems and Middleware).
- Promotion reviewer for various European universities (names confidential).
- Reviewer for European Research Council.
- Reviewer for ANR (Agence Nationale de la Recherche), France.
- Reviewer for National Science Foundation, Switzerland.
- Reviewer for USA-Israel Binational Science Foundation.
- Reviewer for Swedish Research Council .
- Reviewer for Springer Distributed Computing.
- Reviewer for IEEE Transactions on Parallel and Distributed Systems (TPDS).
- Member, ACM Distinguished Service Award Committee 2010.
- Member, ACM Europe Council. Co-chair, ACM Europe Council subcommittee on Members and Awards.

Gaël Thomas is :

- DAIS 2012: IFIP 12th conference on Distributed Applications and Interoperable Systems, Stockholm, Sweden.
- Elected member of the administrative committee of LIP6.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence : Gaël Thomas, Introduction to the C programming language, L1, Université Paris 6

Licence : Gaël Thomas, Introduction to computer architecture, L2, Université Paris 6

Licence : Luciana Arantes, Bertil Folliot, Maria Potop-Butucaru, Julien Sopena, Franck Petit, Principles of operating systems, L3, Université Paris 6

Licence : Mesaac Makpangou, Client/server architecture, L3 professionnelle, Université Paris 6

Licence : Sébastien Monnet, System and Internet programming, L2, Université Paris 6

Licence : Sébastien Monnet, Computer science initiation, L1, Université Paris 6

Master : Luciana Arantes, Sébastien Monnet, Pierre Sens, Julien Sopena, Gaël Thomas, Operating systems kernel, M1, Université Paris 6

Master : Luciana Arantes, O. Marin, Maria Potop-Butucaru, Distributed algorithms, M1, Université Paris 6

Master : Luciana Arantes, Oliver Marin, Pierre Sens, Advanced distributed algorithms, M2, Université Paris 6

Licence : Luciana Arantes, Bertil Folliot, Olivier Marin, POSIX Advanced C system programming, M1 d'Informatique, Université Paris 6

Master : Bertil Folliot, Julien Sopena, Distributed systems and client/serveur, M1 , Université Paris 6

Licence : Bertil Folliot, C programming & systems, L2, Université Paris 6

Licence : Bertil Folliot, Directed projects, L2, Université Paris 6

Licence : Bertil Folliot, Head of the Computer Courses "Applications of Computer Technology and Communication", L2, Université Paris 6

Master : Franck Petit, Maria Potop-Butucaru, Resistance of Distributed Attacks, M2, Université Paris 6,

Master : Luciana Arantes, Sébastien Monnet, Julien Sopena, Gaël Thomas, Middleware for advanced computing systems, M2, Université Paris 6”

Master : Marc Shapiro, Julien Sopena, Gaël Thomas, multicore kernels and virtualisation, M2, Université Paris 6

8.2.2. Supervision

HdR : Gaël Thomas, Amélioration du design et des performances des machines virtuelles langage, UPMC, 09/29/2012

PhD : S. Legtchenko, Exploiting player behavior in distributed architectures for online games, UPMC, 10/25/2012, Sébastien Monnet, Pierre Sens

8.2.3. Juries

Gilles Muller was the reviewer of:

- Maxime Lastera. PhD. INSA Toulouse, (Advisor : J. Arlat)
- Nicolas Berthier. PhD. University of Grenoble, (Advisor : F. Maraninchi)

Pierre Sens was the reviewer of:

- Kiril Georgiev. PhD. LIG, (Advisor : J-F Méhaut)
- Heverson Borba Ribeiro. PhD. IRISA, (Advisor : E. Ancaume)
- Khanh-Toan Tran. PhD. Evry, (Advisor: N. Agoulmine)

Franck Petit was the reviewer of:

- Thomas Morsellino, PhD LaBRI, Bordeaux (Advisor: Y. Métivier)
- Damien Imbs, PhD IRISA, Rennes (Advisor: M. Raynal)

Gaë Thomas was the reviewer of:

- Geoffroy Cogniaux, PhD LIFL, Lilles (Advisor: G. Grimaud)

Julia Lawall was member of the jury of:

- Veronica Uquillas Gomez. PhD. VUB-Univ. Lille, (Advisors : Theo D’Hondt, Stephane Ducasse)

REO Project-Team

8. Dissemination

8.1. Scientific Animation

- Laurent Boudin
 - Member of the Board of Mathematics Licence (*EFU de Licence de mathématiques*), UPMC.
 - Co-organizer of the monthly workgroup “Humaniste” focusing on mathematics applied to humanities, alternatively taking place at UPMC, UP7D and Orléans and jointly handled by LJLL, MAPMO and CAMS.
- Miguel Ángel Fernández Varela
 - Member of the Postdocs Selection Committee, Inria Paris-Rocquencourt, 2012
- Jean-Frédéric Gerbeau
 - Member of the editorial boards of Mathematical Modelling and Numerical Analysis (M2AN), International Journal for Numerical Methods in Biomedical Engineering (IJN-MBE), Communications in Applied and Industrial Mathematics.
 - Service activity at Inria: Délégué Scientifique / Chairman of the project-teams’ committee of Inria Paris-Rocquencourt research center; Member of the evaluation committee of Inria
 - Service activity in Universities: Member of the Mathematics Faculty Council of University P. & M. Curie Paris 6 (conseil de l’UFR 929); member of the scientific committee of the Faculty of Science, University Versailles Saint-Quentin; 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)
- Elisa Schenone
 - Co-organizer of the monthly Junior Seminar of Inria Paris-Rocquencourt
- 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)
 - PRACE peer review staff member (Panel 4 [Biochemistry, Bioinformatics and Life Sciences])
 - Member of the Mechanical Engineering Evaluation Group of the Canadian Granting Agency NSERC
 - Member of the Scientific Committee of the PME DiscInNet
- Marina Vidrascu
 - Member of the Postdocs Selection Committee, Inria Paris-Rocquencourt, 2011
- Irène Vignon-Clementel
 - Organizing the monthly seminar at Inria Paris-Rocquencourt on “modeling and scientific computing”

- Inria: member of the “Conseil d’orientation scientifique et technologique” (scientific and technologic orientation council) of l’Inria, in the subgroup “GT Actions Incitatives” (incentive action working group), PhD grant committee
- Mediator between PhD students and their supervisors for Inria Paris-Rocquencourt
- Coordinator of the associated team CARDIO between REO and Prof. Taylor’s lab at Stanford University, USA and colleagues both at Inria and in the USA (2008-present)

Conferences

- Grégory Arbia
 - Poster, 3rd annual conference on engineering frontiers in pediatric and congenital heart disease, Stanford University, May 2012.
 - Seminar, Laboratoire de Mathématiques appliquées, Univ. Paris 5, June 2012.
- Cristóbal Bertoglio Beltran
 - Contributed talk at 10th International Symposium Computer Methods in Biomechanics and Biomedical Engineering, April 11- 14th, 2012, Berlin, Germany
- Laurent Boudin
 - Seminar, Mapmo, Univ. Orléans, France, February 2012.
 - Seminar, ACSIOM, Univ. Montpellier-II, France, March 2012.
 - Seminar, LAGA, Univ. Paris-Nord, France, March 2012.
 - Colloquium, MAP5, Univ. Paris-Descartes, France, June 2012.
 - Contributed talk, HYP’2012, Padova, Italy, June 2012.
- Muriel Boulakia
 - Seminar, Univ. Metz, march 2012
 - Seminar, Univ. Paris-sud, may 2012
 - Invited speaker, Workshop Control of fluid-structure systems, Toulouse, june 2012
 - Invited speaker, Congrès Random Models in Neurosciences, Paris, july 2012
 - Evaluation talk, AERES evaluation, november 2012
- Paul Cazeaux
 - Seminar, REO team, Inria Paris-Rocquencourt, April 2012
 - Poster, CANUM 2012, Superbesse, Mai 2012
 - Contributed talk, ECCOMAS conference, Vienna, Austria, September 2012
 - Seminar, Homogenization and multiple scales, UPMC Paris 6, November 2012
 - PhD students Seminar, LJLL, UPMC Paris 6, November 2012
- Cesare Corrado
 - Contributed talk at Bioengineering 2012, Oxford, 6-7 September 2012 (with J-F. Gerbeau, P. Moireau),
- Anne-Claire Egloff
 - PASI-CIPPDE 2012, Inverse problems and PDE control. Santiago, Chili, January 2012.
 - Seminar, University of Besançon, May, 2012.
 - Seminar, Institut Elie Cartan, Nancy, May, 2012.
- Miguel Ángel Fernández Varela
 - Seminar, Basque Country University, March 12, Bilbao, Spain
 - Seminar, Weierstrass Institute, April 19, Berlin, Germany
 - Invited talk at minisymposium, CANUM 2012, May 21-25, Superbesse, France

- Keynote speaker at minisymposium, ECCOMAS 2012, September 10-14, 2012, Vienna, Austria
- Seminar, University of Besançon, September, 2012, France
- Seminar, University of Granada, October 16, 2012, Spain
- Seminar, University of Sevilla, October 17, 2012, Spain
- Seminar, University of Zaragoza, October 18, 2012, Spain
- Seminar, Polytechnic University of Madrid, October 19, 2012, Spain
- Justine Fouchet-Incaux
 - Contributed talk Rencontres doctorales de l’IMREDD, Institut Méditerranéen du Risque, de l’Environnement et du Développement Durable, Nice, oct. 2012
 - PhD students seminar, Orsay, nov. 2012
 - CEMRACS’12, Marseille, juil. 2012
- Jean-Frédéric Gerbeau
 - Invited conference, Rencontre iDySCo (Institut Dynamique des Systèmes Complexes), Villard de Lans, January 9-10, 2012
 - Invited conference, Printemps de la cardiologie, Bordeaux, April 12-13, 2012
 - Invited conference, 1st Usergroup Workshop of the Notocord company, Paris, June 7-8, 2012
 - Invited conference, CECAM Workshop: Reduced Order Methods for modeling and computational reduction, Switzerland, May 14-16, 2012
 - Invited minisymposium talk, UK Bioengineering conference, Oxford, September 24-25, 2012
 - Seminar, Journée Calcul Scientifique et Modélisation Mathématique d’Amiens, 2012
 - Seminar, Groupe Medisys, Philips, Jan 3, 2012
- Céline Grandmont
 - Invited speaker, Journées MIREs EDP, October 2012
 - Plenary conference, XIème colloque franco-roumain de mathématiques appliquées, August 2012
 - Invited speaker, Workshop Control of fluid-structure systems and inverse problems, June 2012
 - Plenary conference, CANUM 2012, Super Besse, May 2012
 - Seminar, Lyon, January 2012
- Bérenice Grec
 - Seminar, Applied Mathematics, Univ. Blaise Pascal, March 15, 2012, Clermont-Ferrand, France
 - Journée Mathématiques et Biologie du PRES Sorbonne Paris Cité, April 5, 2012, Paris, France
 - Seminar, PDEs, Univ. Strasbourg, June 19, 2012, Strasbourg, France
- Sébastien Martin
 - Poster, Congrès National de Physiologie Pharmacologie et Thérapeutique, Dijon 2012
 - Seminar, DAMTP: Applied and Computational Analysis, University of Cambridge, UK, 2012
 - Contributed talk, CANUM 2012, Superbesse, France.
 - Contributed talk, Softflow 2012: Biological complex fluids, Cargèse, 2012.

- Invited talk, Workshop on Complexity in Fluid Mechanics, Vienna, Austria 2012.
- Ayman Moussa
 - Contributed talk at the Spring School on Kinetic Theory and Fluid Mechanics, March 26-30th 2012 Université Claude Bernard, Lyon.
 - Workshop on Kinetic Equations, 21th June 2012, ENS Cachan
- Elisa Schenone
 - Poster, CANUM 2012, Superbesse, May 2012
 - CEMRACS 2012, Cirm-Marseille, 16/07-24/08, 2012
- Saverio Smaildone
 - Contributed talk 10th World Congress on Computational Mechanics (WCCM 2012) 8 -13 July 2012, São Paulo, Brazil
 - Contributed talk 6th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2012) 10-14 September 2012, University of Vienna, Austria.
 - Seminar, Inria-Rocquencourt, November 20th, Le Chesnay, France
- Marc Thiriet
 - Plenary Conference, CMMBE 2012, 10th International Symposium on Computer Methods in Biomechanics and Biomedical Engineering, 11–14 april 2012, Berlin, Germany
 - Contributed talk International Union of Theoretical and Applied Mechanics (IUTAM) Symposium on Particle Methods in Fluid Mechanics, October 15–17, 2012 Lyngby, Denmark (with Chatelin R, Poncet P, Didier A, Murriss-Espin M, Anne-Archard D)
 - Contributed talk 12TH International Symposium on Therapeutic Ultrasound, , 10–13 June, 2012, Heidelberg, Germany, (with Maxim A. Solovchuk, Tony W. H. Sheu)
- Marina Vidrascu
 - Contributed talk 10th World Congress on Computational Mechanics (WCCM 2012) 8 -13 July 2012, São Paulo, Brazil
 - Invited conference, XIème colloque franco-roumain de mathématiques appliquées, August 2012
 - Contributed talk 21st International Conference on Domain Decomposition Methods, 25-29 June, Inria Rennes-Bretagne
 - Seminar, Univ Caen (France)
- Irène Vignon-Clementel
 - Seminar, Mathematical modeling in Medicine workshop, Laboratoire de Mathématique, March 12th 2012, U. Versailles Saint Quentin, France
 - Invited lecture at the Spring school 2012 on systems biology, March 30th 2012, HelmholtzZentrum München, Germany
 - Contributed talk, 10th International Symposium on Biomechanics and Biomedical Engineering, April 11th-14th, Berlin, Germany
 - Invited poster, 3rd International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, May 1st-2nd 2012, Stanford University, USA
 - Invited talk, BIS'2012 workshop, May 22nd, Paris, France
 - Contributed talk co-authored N. Jagiella and D. Drasdo, SBMC conference, July 9th-11th, Leipzig, Germany
 - Invited keynote at a minisymposium, ECCOMAS, 10th-14th September, Vienna, Austria [cancelled due to personal reasons]
 - Invited talk, Cancersys kickoff meeting, PI presentation of Lungsys consortium, October 8th-9th 2012, Heidelberg, Germany
 - Seminar, Laboratoire Jacques Louis Lions, Paris 6 UPMC, November 19th, 2012, France

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

DUT :

- Justine Fouchet-Incaux Algorithmiques et langages, 36h, IUT d'Orsay, département informatique, Université Paris-Sud
- Justine Fouchet-Incaux Mathématiques S2, 25,5h, IUT d'Orsay, département Mesures-Physiques, Université Paris-Sud
- Justine Fouchet-Incaux Mathématiques S1, 24h, IUT d'Orsay, département Chimie, Université Paris-Sud

Licence :

- Grégory Arbia Algèbre 1: calcul vectoriel, 36h, L1, UPMC.
- Grégory Arbia Calcul matriciel numérique, 24h, L3, UPMC.
- Laurent Boudin: Series and integrals (15h), L2, UPMC.
- Laurent Boudin: Multivariable calculus and multiple integrals (72h), L2, UPMC.
- Laurent Boudin: Hilbert analysis (16h), L3, Polytech'Paris.
- Paul Cazeaux Algebra 1, vectorial calculus, 72h, L1, UPMC Paris 6
- Paul Cazeaux Analysis 1, Functions, 36h, L1, UPMC Paris 6
- Anne-Claire Egloff: Fonctions de plusieurs variables et intégrales multiples, L2, (36 h), UPMC
- Anne-Claire Egloff: Khôlles Séries et intégrales, L2 (20 h), UPMC
- Ayman Moussa, Numerical Methods for differential equations (36h), L3, UPMC.
- Ayman Moussa, Introduction to Numerical Analysis oral exams, (15h), L3, UPMC.
- Miguel A. Fernández Scientific computing, 30h, level L3, École des Ponts ParisTech, France.
- Muriel Boulakia Vector calculus (24h), L1, UPMC, France
- Muriel Boulakia Linear optimization and convexity (36h), L3, UPMC, France.
- Muriel Boulakia Hilbertian analysis (30h), L3, Polytech'Paris, France
- Irène Vignon-Clementel Mathematics for biology, 64h ETD, L1 - undergraduate, Univ. de Versailles Saint Quentin

Master :

- Laurent Boudin: Numerical analysis (8h), M1, Polytech'Paris.
- Laurent Boudin: Basics for numerical methods (32h), M1, UPMC.
- Ayman Moussa, Real Analysis (72h), M1, UPMC.
- Ayman Moussa, Numerical analysis (38h), M1, Polytech'Paris.
- Ayman Moussa, Revision lecture on analysis and linear algebra (50h), M1, AIMS-Sénégal.
- Marc Thiriet Biofluid flows, 12 h. M2, UPMC
- Miguel A. Fernández Numerical methods in bio-fluids, 6h, level M2, University of Vigo, Spain.
- Miguel A. Fernández Inverse problems, 44h, level M1, Ecole Supérieure d'Ingénieurs Léonard de Vinci
- Muriel Boulakia Approximation methods for partial differential equations (72h, taught in english), M1, UPMC, France

- Muriel Boulakia Preparatory course for teaching admission examination Agrégation (15h), M2, UPMC, France
- Irène Vignon-Clementel Modeling Techniques, 24h ETD, M1, Univ de Versailles Saint Quentin.
- Irène Vignon-Clementel Different types of model for blood flow simulations, within the course Mathematics modeling for biology, 5h ETD, M1, Ecole Centrale Paris
- Apport des mathématiques appliquées (30min) "Diplôme universitaire de Médecine" on percutaneous valvular replacement, May 25th, Paris, France.

Others

- Ecole de printemps - Marrakech (LAMAI, FST) : Marc Thiriet Mathématiques & Interactions (6h)
- Ecole d'été - Roscoff (ICS, UPMC) : Marc Thiriet Biomathematics & Bioinformatics (12h)
- Biomathematical and Biomechanical Modeling and Simulation, Marc Thiriet (L3) Dpts of Mathematics, Computer Sciences, Physics, and Biology, 20h, Tbilisi State University (TSU)
- Laurent Boudin Supervisor (for mathematics) of the bidisciplinary computer science / applied mathematics licence program and of the joint program UPMC-Brown on computer science / applied mathematics at the licence level (18h).
- Irène Vignon-Clementel Numerical simulations of blood flow, 1h30, as part of the undergraduate continuum mechanics class at AgroParisTech, France

8.2.2. Supervision

PhD : Cristóbal Bertoglio Beltran, *Forwar and Inverse problems in fluid-structure interaction. Application in hemodynamics*, 23 November 2012. Supervisors: J-F. Gerbeau & M.A. Fernández Varela.

PhD : Paul Cazeaux, *Homogenization and lungs modelling*, 12 December 2012 Supervisors: C. Grandmont & Y. Maday

PhD : Anne-Claire Egloffé, *Inverse problems in lungs modelling*, 19 October 2012. Supervisors: C. Grandmont & M. Boulakia.

PhD : Sofiene Hendili, *Structures élastiques comportant une fine couche d'hétérogénéités : étude asymptotique et numérique*, 4 July 2012. Supervisors: F. Krasucki & M. Vidrascu.

PhD in progress : Grégory Arbia, *Multi-scale Modeling of Single Ventricle Hearts for Clinical Decision Support*, since October 2010. 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 : Stéphane Liwarek, *Air flow in the nasal cavity*, since October 2010. Supervisors: M.A. Fernández & J-F. Gerbeau

PhD in progress : Jimmy Mullaert, *Fluid-structure interaction*, since September 2009. Supervisors: M.A. Fernández & Y. Maday

PhD in progress : Elisa Schenone, *Inverse problems in electrocardiology*, since October 2011. Supervisors: J-F. Gerbeau & M. Boulakia.

PhD in progress : Saverio Smaldone, *Numerical methods for cardiac hemodynamics*, since October 2010, Supervisors: J-F. Gerbeau & M.A. Fernández.

8.2.3. Juries

- Laurent Boudin

- Member of the PhD committees of Phung Thanh-Tam (University Orléans, July 2012).
- Muriel Boulakia
 - Hiring committees: Univ. Caen, Univ. Versailles, Univ. P. & M. Curie (MCF positions)
- Miguel Ángel Fernández Varela
 - Member of the PhD committees of M. Pozzoli ((referee), Politecnico di Milano, Italy); A. Fumagalli (Politecnico di Milano, Italy), M. Pischutta (Politecnico di Milano, Italy), V. Vitelli (Politecnico di Milano, Italy) and C. Bertoglio (University Paris VI) and B. Fabrèges (University Orsay Paris-Sud)
- Jean-Frédéric Gerbeau
 - Member of the PhD committees of Alistair Brown (Sheffield university (referee)) , Cristóbal Bertoglio (University Paris VI)
 - Hiring committees: Univ Montpellier (Professor position), Inria (DR2).
- Céline Grandmont
 - Member of the PhD committees of S. Court ((president of the jury) University Toulouse); A.-C. Egloff (University Paris VI) and P. Cazeaux (University Paris VI)
 - Member of the HDR committees: of O. Saut ((referee) University Bordeaux Univ.); S. Martin (University Orsay Paris-Sud)
 - Hiring committees: Bordeaux Univ. (President of the hiring committee for an Assistant Professor position in Scientific computing), Bordeaux Univ. (Professor position), Dauphine (Assistant Professor position).
- Bérenice Grec
 - Hiring committee: Univ. Orléans (MCF position)
- Sébastien Martin
 - Hiring committee: École Nationale Supérieure des Arts et Métiers (mechanics).
- Marc Thiriet
 - Member of the selection committee of HPC projects in the framework of HPC-Europa2 – Pan-European Research Infrastructure for High Performance Computing supported by the European Commission Capacities Area - Research Infrastructures Initiative
 - Member of the PhD committees of Referee of Bruno Tayllamin ((referee) University Montpellier 2); Edmund G. Lobb, (Aeronautics Dpt., Imperial College of London)
- Marina Vidrascu
 - Member of the PhD committees of Sofiene Hendili (University Montpellier)
 - Hiring committee: Univ Grenoble (MCF position)
- Irène Vignon-Clementel
 - Member of the PhD committees of: Yiyi Wei (University Lille); Nick Jagiella (University Paris 6 UPMC)
 - Hiring committee for assistant professor positions at Grenoble University

8.3. Popularization

- Jean-Frédéric Gerbeau
 - Mediation and popularization of sciences: talk for "Fête de la science" Inria Paris-Rocquencourt
- Irène Vignon-Clementel
 - Journée "Filles et Mathématiques", High-school students, February 2nd & December 12th, 2012, Paris, France

SECRET Project-Team

8. Dissemination

8.1. Scientific Animation

8.1.1. Editorial activities.

- *IEEE Transactions on Information Theory*, associate editor: J.-P. Tillich for *Coding Theory*.
- *Designs, Codes and Cryptography*, associate editor: P. Charpin, since 2003.
- *RAIRO - Theoretical Informatics and Applications*, associate editor: N. Sendrier.
- Special issue in Coding and Cryptography, *Designs, Codes and Cryptography*, 2012, co-editor: A. Canteaut.
- *FSE 2012 (Fast Software Encryption)*: March, 19-21, 2012, Washington DC, USA, Program chair and editor of the proceedings: A. Canteaut
- *Finite Fields and Their Applications. Character Sums and Polynomials*, Radon Series on Computational and Applied Mathematics, Degruyter, In Press. Editeurs: P. Charpin, A. Pott (U. Magdeburg) et A. Winterhof (Austrian Acad. of Sc.)
- A. Canteaut is a member of the steering committee of *Fast Software Encryption (FSE)*;
- N. Sendrier is a member of the steering committee of *Post-quantum cryptography (PQCrypto)*.

8.1.2. Program committees

- FSE 2012: March 19-21, 2012, Washington DC, USA (A. Canteaut, program chair);
- PKC 2012: May 21-23, 2012, Darmstadt, Germany (N. Sendrier);
- SETA 2012, June 4-8, 2012, Waterloo, Canada (P. Charpin);
- SAC 2012: August 16-17, 2012, Windsor, Ontario, Canada (A. Canteaut);
- *RICAM-Workshop on Finite Fields and Their Applications: Character Sums and Polynomials*, September 2-7, 2012, St. Wolfgang Federal Institute, Austria (P. Charpin);
- YACC 2012, September 24-28, 2012, Porquerolles, France (A. Canteaut);
- Journées Codage et Cryptographie du GDR-IM, October 7-12, 2012, Dinard, France (A. Canteaut);
- Indocrypt 2012: December 9-12, 2012, Calcutta, India (N. Sendrier);
- FSE 2013: March 11-13, 2013, Singapore, Singapore (A. Canteaut, M. Naya-Plasencia);
- WCC 2013: April 15-19, 2013, Bergen, Norway (A. Canteaut, N. Sendrier);
- PQCrypto 2013: June 4-7, Limoges, France (N. Sendrier, JP Tillich);
- Asiacrypt 2013: December 1-5, Bengaluru, India (A. Canteaut, N. Sendrier);

8.1.3. Invited talks

- N. Sendrier. *Code-based Cryptography: Theory and Practice*. ARES, MoCrySEn 2012, Prague, Czech Republic, September 2012.
- N. Sendrier. *Code-based Cryptography*. Post-Quantum Cryptography and Quantum Algorithms, Lorentz Center, Leiden, The Netherlands, November 2012.
- D.E. Simos. *Families of Block Ciphers from Combinatorial Designs*. In *Cryptography and its Applications in the Armed Forces (CAIAF2012)*, Hellenic Military Academy "Evelpidon", Vari, Greece, April 2012.

8.1.4. 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;
- JP Tillich is in charge of “Formation par la recherche” for the Paris-Rocquencourt center.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- A. Canteaut, *Stream ciphers*, 6 hours, M2, Telecom ParisTech, France;
- A. Canteaut, *Mathematical aspects of symmetric cryptography*, 3 hours, M2 (corps de Mines), Telecom ParisTech, France;
- A. Canteaut, *Advanced topics in symmetric cryptology*, 9 hours, M2, DTU, Denmark;
- J.-P. Tillich, *Algorithms and Programming*, 36 hours, M1, Ecole Polytechnique, France;
- J.-P. Tillich, *Introduction to Information Theory*, 32 hours, M2, Ecole Polytechnique, France.

8.2.2. Supervision

PhD: Christina Boura, *Sécurité et cryptanalyse des fonctions de hachage*, Université Pierre-et-Marie Curie, December 2012, supervisor: A. Canteaut

PhD: Stéphane Jacob, *Protection cryptographique des bases de données : conception et cryptanalyse*, Université Pierre-et-Marie Curie, March 2012, supervisor: A. Canteaut

PhD in progress: Mamdouh Abbara, *Quantum turbo-codes*, August 2009, supervisor: JP. Tillich.

PhD in progress: Marion Bellard, *Influence du mapping pour la reconnaissance d’un système de communication*, January 2011, supervisors: N. Sendrier and J.-P. Tillich

PhD in progress: Grégory Landais, *Mise en oeuvre des cryptosystèmes basés sur les codes correcteurs d’erreurs et de leurs cryptanalyse*, October 2010, supervisors: M. Finiasz and N. Sendrier

PhD in progress: Denise Maurice, *Quantum LDPC codes*, September 2010, supervisor : JP. Tillich.

PhD in progress: Rafael Misoczki, *Aspects of code-based cryptography*, November 2010, supervisor: N. Sendrier

PhD in progress: Jean-Christophe Sibel, *Decoding LDPC codes with many short cycles*, October 2009, supervisor : D. Declercq.

PhD in progress: Valentin Suder, *Les Permutations en Cryptographie Symétrique*, October 2011, supervisor: P. Charpin.

PhD in progress: Audrey Tixier, *Reconstruction of LDPC codes*, October 2012, supervisor: JP. Tillich

8.2.3. Juries

- Jean-Claude Carlach, *Contribution à la construction et au décodage à décision douce des codes correcteurs d’erreurs auto-duaux extrémaux*, Institut National des Sciences Appliquées de Rennes, February 2, 2012, committee: JP. Tillich.
- Stéphane Jacob, *Protection cryptographique des bases de données : conception et cryptanalyse*, Université Pierre-et-Marie Curie, March 8, 2012, committee: A. Canteaut (supervisor).
- Marine Minier, *Quelques résultats en cryptographie symétrique, pour les modèles de confiance dans les réseaux ambiants et la sécurité dans les réseaux de capteurs sans fil*, HDR, Université Lyon 1, May 31, 2012, committee: A. Canteaut.
- Pouyan Sepehrdad, *Statistical and Algebraic Cryptanalysis of Lightweight and Ultra-Lightweight Symmetric Primitives*, Ecole Polytechnique Fédérale de Lausanne, Suisse, June 11, 2012, committee: A. Canteaut (reviewer).

- Matteo Gorgoglione, *Analyse et construction de codes LDPC non-binaires pour des canaux à évanouissement*, Université de Cergy-Pontoise, October 25, 2012, committee: JP. Tillich (reviewer).
- Anja Becker, *The representation technique – Applications to hard problems in cryptography*, UVSQ, Octobre 26, 2012, committee: N. Sendrier (reviewer).
- Matthieu Legeay, *Utilisation du groupe de permutations d'un code correcteur pour améliorer l'efficacité du décodage*, Université de Rennes 1, November 20, 2012, committee: N. Sendrier (reviewer).
- Christina Boura, *Sécurité et cryptanalyse des fonctions de hachage*, Université Pierre-et-Marie Curie, December 7, 2012, committee: A. Canteaut (supervisor).
- Sihem Mesnager, *Contributions aux fonctions booléennes pour la cryptographie symétrique et aux codes correcteurs d'erreurs*, HDR, Université Paris 8, December 10, 2012, committee: P. Charpin (reviewer), A. Canteaut.
- N. Delfosse, *Constructions et performances de codes LDPC quantiques*, Université Bordeaux I, December 12, 2012, committee: JP. Tillich (reviewer).

8.3. Popularization

- Anne Canteaut is a co-author of a paper on the state-of-the-art on the AES standard in the large-audience journal *MISC* [17].
- Lecture on cryptography at the *Journées Filles et Maths*, organized by Animath and Femmes et Sciences, for students in “Première” and “Terminale”, IHP, Paris, December 21, 2012, A. Canteaut.
- Lectures (6h in total) to an audience of professors in “classes préparatoires” on quantum algorithms, Luminy, May 9, 2012, J.P. Tillich.

SIERRA Project-Team

9. Dissemination

9.1. Scientific Animation

9.1.1. Editorial boards

- 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.
- G. Obozinski: Journal of Machine Learning Research, Member of the Editorial Board.

9.1.2. Area chairs

- G. Obozinski: International conference on Artificial Intelligence and Statistics (AISTATS) 2012.
- F. Bach: International Conference on Machine Learning, 2012.
- S. Lacoste-Julien, F. Bach: Conference on Uncertainty in Artificial Intelligence, 2012.

9.1.3. Reviewing

- Journals: Annals of Statistics, Machine Learning, Journal of Machine Learning Research (JMLR), IEEE Transaction on Information Theory, Transaction in Pattern Recognition and Machine Intelligence (TPAMI), Information and Inference (IMAI), Scandinavian Journal of Statistics (SJS), Statistics and Computing (STO), Annales de l'IHP, Annals of Statistics
- Conferences: UAI, ECML, NIPS, CVPR, ICML, COLT, AISTATS.

9.1.4. Other

- S. Arlot is member of the board for the entrance exam in Ecole Normale Supérieure (mathematics, voie B/L).

9.1.5. Workshop and conference organization

- M. Schmidt, Session Organizer at International Conference on Continuous Optimization (July 27 - August 1, 2013).
- G. Obozinski, Co-organiser of the workshop "Sparsity, Dictionaries and Projections in Machine Learning and Signal Processing" at ICML 2012, Edinburgh, Scotland. <http://www.di.ens.fr/~obozinski/ICML2012workshop/>.
- F. Bach: International Conference on Machine Learning, 2012, Workshop co-chair.
- F. Bach: Co-organizer of the NIPS workshop on "Analysis Operator Learning vs. Dictionary Learning: Fraternal Twins in Sparse Modeling", <https://sites.google.com/site/dlaoplnips2012/>.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Licence : S. Arlot, F. Bach, G. Obozinski, "Apprentissage statistique", 35h, Ecole Normale Supérieure, Filière "Math-Info", première année.
- Licence: G. Obozinski, Introduction aux modèles graphiques (4h) in Enseignement spécialisé "Apprentissage artificiel" for second year students at Ecole des Mines.

Mastère: S. Arlot and F. Bach, "Statistical learning", 24h, Mastère M2, Université Paris-Sud, France.

Mastère: G. Obozinski, N. Le Roux, Introduction à l'apprentissage machine appliqué aux neurosciences et à la cognition Co-teaching (6h) in the course of the Master Recherche en Sciences Cognitives co-habilitated by EHESS, ENS and Université Paris Descartes.

Mastère: F. Bach, G. Obozinski, Introduction aux modèles graphiques (30h), Master MVA (Ecole Normale Supérieure de Cachan).

Doctorat: S. Arlot, "Model selection via penalization, resampling and cross-validation, with application to change-point detection", 6h, Université de Cergy.

Doctorat: G. Obozinski, Probabilistic graphical models for Information Retrieval, in the Russian Summer School in Information Retrieval (RuSSIR 2012), Yaroslavl, Russia.

Doctorat: F. Bach, International Computer Vision Summer School 2012, 3h, Sicily.

Doctorat: F. Bach, Summer school on Visual Recognition and Machine Learning, 3h, Grenoble.

Doctorat: F. Bach: Machine learning summer school (MLSS), 3h, Kyoto, Japan.

9.2.2. Supervision

PhD : Toby Hocking, "Learning algorithms and statistical software, with applications to bioinformatics", ENS Cachan, November 20, 2012, Advisors: F. Bach, J.-P. Vert (Ecole des Mines de Paris - Institut Curie).

PhD: Augustin Lefèvre, "Dictionary learning methods for single-channel audio source separation", ENS Cachan, October 3, 2012, Advisors: F. Bach and C. Févotte (Telecom Paristech).

PhD: Armand Joulin, "Convex optimization for co-segmentation", ENS Cachan, December 17, 2012, Advisors: F. Bach and J. Ponce (Willow project-team).

9.3. Invited presentations

S. Arlot, "Optimal model selection with V-fold cross-validation: how should V be chosen?", World Congress in Probability and Statistics 2012, Istanbul.

S. Arlot, "Resampling-based estimation of the accuracy of satellite ephemerides", Inaugural Conference of the Laboratory Fibonacci, Scuola Normale Superiore di Pisa, 2012.

S. Arlot, "Choix de V pour la sélection de modèles par validation croisée V-fold en estimation de densité", Séminaire parisien de statistique, IHP, Paris, 2012.

S. Arlot, "Calibration automatique d'estimateurs linéaires à l'aide de pénalités minimales, application à la régression multi-tâches.", Séminaire de Statistique de l'IMT, Toulouse, 2012.

F. Bach, International Conference on Pattern Recognition Applications and Methods, Faro, Portugal, 2012 (keynote speaker).

F. Bach, Rank Prize Symposium (invited talk), Lake District, England, 2012.

F. Bach, University of Cambridge (two seminars), 2012.

F. Bach, Schlumberger workshop on Mathematical Models of Sound Analysis, IHES (invited talk), 2012.

F. Bach, Joint Pattern Recognition Symposium of the German Association for Pattern Recognition (DAGM) (invited talk), Graz, Austria, 2012.

F. Bach, International Workshop on Machine Learning for Signal Processing (plenary lecture), Santander, Spain, 2012.

F. Bach, Seminar Max-Planck Institute, Tübingen, October 2012.

E. Grave, Laboratoire d'Informatique de Paris 6, Université Pierre et Marie Curie (Seminar), 2012.

S. Lacoste-Julien, "Harnessing the structure of data for discriminative machine learning", Colloque du Département d'Informatique et de Recherche Opérationnelle, Université de Montréal, Montréal, Canada, February 2012

S. Lacoste-Julien, "Structured Alignment Methods in Machine Learning", SMT seminar at the LIMSI, Orsay, France, July 2012

S. Lacoste-Julien, "Frank-Wolfe optimization insights in machine learning", machine learning seminar, University of Toronto, Toronto, Canada, August 2012.

S. Lacoste-Julien, "Frank-Wolfe optimization insights in machine learning", Machine Learning Group seminar, University of Cambridge, Cambridge, UK, August 2012.

S. Lacoste-Julien, "Harnessing the structure of data in machine learning", invited talk, Department of Engineering Science, University of Oxford, Oxford, UK, September 2012.

S. Lacoste-Julien, "Frank-Wolfe optimization insights in machine learning", invited talk, Stanford AI Lab, Stanford University, Stanford, USA, December 2012.

G. Obozinski, Swiss Statistical Seminar, Bern, Switzerland, April 2012.

G. Obozinski, Séminaire de Statistiques, Université de Pennsylvanie, Philadelphia, PA, USA, May 2012.

G. Obozinski, Séminaire de Statistiques, Université Paris 11, May 2012.

G. Obozinski, Journées de Statistiques (Conférence annuelle de la Société Française de Statistiques), Université Libre de Bruxelles, Belgium, May 2012.

G. Obozinski, Congrès mondial de Probabilités et Statistiques, Istanbul, Turkey, July 2012.

G. Obozinski, séminaire du CEREMADE, Université Paris-Dauphine, December 2012.

M. Schmidt, NAIS Workshop on Advances in Large-Scale Optimization, Edinburgh, May 24-25, 2012.

M. Schmidt, International Symposium on Mathematical Programming, Berlin, August 19-24, 2012.

M. Schmidt, University of British Columbia, "Linearly-Convergent Stochastic-Gradient Methods", Seminar, December 10, 2012.

M. Schmidt, - Simon Fraser University, "Opening up the black box: Faster methods for non-smooth and big-data optimization", Seminar, December 11, 2012.

9.4. Prizes and awards

M. Schmidt, NSERC Postdoctoral Fellowship (January 2012 - December 2013).

S. Lacoste-Julien, Research in Paris fellowship 2011-2012.

F. Bach: Inria young researcher prize, 2012.

R. Jenatton: Thesis prize from Fondation Hadamard, 2012.

R. Jenatton: Thesis prize from AFIA, accessit, 2012.

9.5. Popularization

Participation to Inria-Rocquencourt "Fête de la Science", 2012.

SISYPHE Project-Team

8. Dissemination

8.1. Scientific Animation

P.A. Bliman:

- Scientist in charge of latin America at Department of International Affairs, Inria.
- Associate Editor of Systems & Control Letters.
- Chargé de mission in the Ministry of research.

F. Clément:

- Scientific head of the Large Scale Initiative Action **REGATE** (REGulation of the GonAdoTropE axis).
- 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>.

Participations in examination boards:

- INRA Experienced Research Scientist open competitions for non-assigned positions (admissibility phase).
- INRA Research Director open competitions (admissibility and admission phases).
- Inria Research Director open competitions (admission).

M. Desroches:

- Section Chief Editor of the Media Gallery of the dynamical systems website <http://www.dynamicalsystems.org> (hosted by the Society for Applied and Industrial Mathematics (SIAM)).
- Co-organizer, together with Martin Krupa and Alexandre Vidal, of a special session titled “Multiple Time Scale Dynamics With a View Towards Biological Applications” at the 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, 1-5 July 2012, Orlando, USA.

M. Mirrahimi:

- Associate Editor of Systems & Control Letters.
- Member of IFAC Technical Committee on Distributed Parameter Systems.
- Co-organizer together with Matt R. James, Australian National University, of two invited sessions on Quantum Control at the 48th IEEE Conference on Decision and Control.

M. Sorine:

- Member of IFAC Technical Committee on the Biological and Medical Systems (IFAC TC 8.2).
- Member of the Program Committee of FHIES 2012, the “Second International Symposium on Foundations of Health Information Engineering and Systems”.
- Member of the Program Committee of the 8th IFAC Symposium on Biological and Medical Systems, Budapest, Hungary / 29–31 August, 2012.
- Member of the scientific board of the **ITMO Circulation, Metabolism and Nutrition** (Multi Organization Thematic Institute of the French National Alliance for Life and Health Sciences).
- Member of the steering committee of the clinical study CGAO-REA.

Q. Zhang:

- Member of IFAC Technical Committee on Fault Detection, Supervision and Safety of Technical Processes.
- Member of IFAC Technical Committee on Modelling, Identification and Signal Processing.
- Member of the International Program Committee of the 16th IFAC Symposium on System Identification.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Master: F. Clément, “Modelling and control of biological systems” course, 2,5 ECTS, part of the "Master's Degree in BioInformatics and BioStatistics" (Paris-Sud 11 University, in collaboration with Béatrice Laroche) <http://www.bibs.u-psud.fr/>

Master : M. Desroches, “Introduction to ODEs and PDEs, 20 heures, M1, University of Bristol, UK.

Master: M. Desroches, mini-course on “Numerical simulation of ODEs and numerical bifurcations analysis”, 6 hours, Université Pierre et Marie Curie, Station Biologique de Roscoff, July 2012.

Master: M. Sorine, “The cardiovascular system and its short-term control - Modelling and signal analysis”, 3 ECTS. BioMedical Engineering - Master's Degree Program, Paris-Descartes University and the Paris Institute of Technology (ParisTech) <http://www.bme-paris.com/en/article/46>.

8.2.2. Supervision

PhD : Najmeddine Attia, “Comportement asymptotique de marches aléatoires de branchement dans \mathbb{R}^d et dimension de Hausdorff”, Paris 13 University, December, 20. Advisor: J. Barral.

PhD: Hadis Amini, “Stabilisation des systèmes quantiques à temps discrets et stabilité des filtres quantiques à temps continus”, Ecole Nationale Supérieure Des Mines de Paris, September, 27. Advisors: M. Mirrahimi, P. Rouchon.

PhD: Zaki Leghtas, “Préparation et stabilisation de systèmes quantiques”, Ecole Nationale Supérieure Des Mines de Paris, September, 27. Advisors: M. Mirrahimi, P. Rouchon.

PhD : Mohamad Safa, “Modélisation réduite de la pile à combustible en vue de la surveillance et du diagnostic par spectroscopie d'impédance”, Paris-Sud 11 University, October 24. Advisors: P.-A. Bliman, M. Sorine.

PhD : Peipei Shang, “Analyse mathématique et contrôle optimal de lois de conservation multi-échelles: application à des populations cellulaires structurées”, UPMC (Université Pierre et Marie Curie), July, 5. Advisors: F. Clément, J.-M. Coron.

8.2.3. Juries

P.-A. Bliman: member of the PhD committee of Samuel Martin, Grenoble University, Novembre 28.

M. Desroches: member of a PhD committee at the University of Sevilla (Spain) on the 19 December 2012.

M. Sorine: member of the following committees:

- PhD committee of Delphine Bresch-Pietri, Ecole Nationale Supérieure des Mines de Paris, December 17.
- HdR committee of Denis Efimov, Lille 1 University, November 28.
- PhD committee of Mohamad Safa, Paris-Sud 11 University, October 24.

SMIS Project-Team

9. Dissemination

9.1. Scientific Animation

- Philippe Pucheral
 - Area Editor of the Information Systems international journal (2007-now).
 - PC member of MOBIWIS' 12, CODAPSY' 12, EDBT' 12 (demo).
 - Member of the recruiting committees of UVSQ and Paris VI.
 - Co-founder of the bi-annual French Summer School “Masses de Données Distribuées” and co-organiser of this school in 2010 and 2012.
- Luc Bouganim
 - President of the BDA Board, the steering committee of the national French conference on Databases.
 - PC member of MOBIWIS' 12, BDA' 12.
 - Member of the recruiting committees of INSA Lyon.
 - Reviewer for the Information Systems international journal and ACM TKDE journal.
 - 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 Commission PES (Prime d'Excellence Scientifique) for computer science at UVSQ (since 2010).
- Nicolas Anciaux
 - Demonstration chair at BDA 2012.
 - Co-organizer of the 4th edition of Atelier Protection de la Vie Privée (APVP 2013)
 - Member of Commission de Développement Technologique (CDT) at Inria Rocquencourt
 - Member of the Editorial Board of TSI Journal (Technique et Science Informatiques) (2007 – until 2012).
- Benjamin Nguyen
 - Member of the Advisory Committee of the W3C for the UVSQ, of the W3C XQuery Working Group (Test Suite Editor) and of the W3C Social Web Interest Group.
 - PC member of VLDB 2012, VLDB 2012 PhD Workshop, ICCSAMA 2013, BDA 2012.
 - Member of the editorial committee of TSI (Techniques et Sciences Informatiques), Eds. Lavoisier.
 - Organizer of Atelier Protection de la Vie Privée (APVP) 2013.
 - Member of the Selection Committee of Paris-VI and INSA Lyon.
 - Elected member of the PRiSM Laboratory Council.
 - Elected member of the UVSQ Science faculty Scientific Committee.
 - In charge of the UVSQ Computer Science Masters diploma. In charge of the 2014/2015 proposal.
 - Responsible for the UVSQ continuous training of High School teachers in computer science.

- Iulian Sandu Popa
 - Tutorial chair of MOBILWARE 2012 (5th International Conference on MOBILE Wireless MiddleWARE, Operating Systems, and Applications).
 - Reviewer for the Earth Science Informatics Journal and the Information Systems Journal.

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.

- P. Pucheral: (130h/y)
 - Full professor at UVSQ.
 - Director of the research Master COSY (UVSQ).
 - Member of the HDR committee of the STV doctoral school.
 - Courses on databases, DBMS architecture and security in Master1, Master2 and engineer school ISTY.
- B. Nguyen: (107h/y)
 - Associate professor at UVSQ.
 - Courses on object programming, databases, XML in undergraduate and Master2.
 - Courses on Teaching CS courses for High School teachers.
- I. Sandu Popa: (192h/y)
 - Associate professor at UVSQ.
 - Courses on C programming and databases in undergraduate and Master2.
- L. Bouganim: (90h/y)
 - Courses on DBMS architecture, data security, database technology in Master1 and Master2 (AFTI, Orsay) and in engineering school (ENST Paris).
- N. Anciaux: (90h/y)
 - Courses on DBMS internal mechanisms, database technology in Master1 and Master2 (UVSQ), and in engineering school (ENSTA Paris).
- L. Le Folgoc: (64h/y)
 - Courses on Relational Database Concepts and SQL, system programming in Masters 1 (UVSQ).

9.2.2. Supervision

Lionel Le Folgoc. *Serveurs personnels de données : réflexions sur leur conception et leurs performances*. PhD Thesis University of Versailles Saint-Quentin-en-Yvelines (UVSQ), December 2012, co-supervised by Luc Bouganim and Nicolas Anciaux.

Bogdan Butnaru, *Optimizations of XQuery in peer-to-peer distributed XML databases*. PhD Thesis University of Versailles Saint-Quentin-en-Yvelines (UVSQ), April 2012, co-supervised by Benjamin Nguyen and Georges Gardarin.

PhD in progress : Quoc-Cuong To, starting in November 2012, Co-supervised by Philippe Pucheral and Benjamin Nguyen.

PhD in progress : Saliha Lallali, starting in November 2012, Co-supervised by Philippe Pucheral, Nicolas Anciaux and Iulian Sandu Popa.

PhD in progress : Matias Bjørling, starting in December 2011, co-supervised by Philippe Bonnet and Luc Bouganim.

PhD in progress : Niv Dayan, starting in December 2011, co-supervised by Philippe Bonnet and Luc Bouganim.

9.2.3. Juries

- L. Bouganim
 - Referee for the PhD thesis of Toufik Sarni: Vers une Mémoire Transactionnelle Temps Réel, University of Nantes, October 2012.
 - Referee for the PhD thesis of Stéphane Jacob: Protection Cryptographique des Bases de Données : Conception et Cryptanalyse, University of Paris 6, March 2012.
 - Jury member of the PhD defense of Lionel Le Folgoc: Personal Data Server Engine: Design and Performance Considerations, University of Versailles, December 2012.
 - Jury member of the PhD defense of Hien Thi Thu Truong: A Contract-based and Trust-aware Collaboration Model, University of Lorraine, December 2012.
- N. Anciaux
 - Jury member of the PhD defense of Lionel Le Folgoc: Personal Data Server Engine: Design and Performance Considerations, University of Versailles, December 2012.
- B. Nguyen
 - Jury member of the PhD defense of Bogdan Butnaru : Optimizations of XQuery in peer-to-peer distributed XML databases, University of Versailles, April 2012
 - Jury member of the PhD defense of Noor Malla : Partitioning XML data, towards distributed and parallel management, University of Paris-XI, September 2012.

9.3. Popularization

SMIS members have an important dissemination activity, motivated both by the popularity of the addressed research domain (security/privacy) and of the targeted applications (e.g., personal medical folder), leading to interactions with different institutions (e.g., the French Deputy Chamber, the Parliamentary Office for Evaluation of Scientific and Technological Options (OPECST), the French Network and Information Security Agency), interviews resulting in articles in large audience magazine (e.g., “La Recherche”, the CNRS Journal or BBC news) and talks and demonstrations targeting industrials in wide audience conferences (e.g., JavaOne, e-Smart, “Les rendez-vous Carnot”)

- Organization of the French Summer School “Masses de Données Distribuées”, Philippe Pucheral, June 2012
- Presentation at the “1/2 heure de science”, Database cryptography, Luc Bouganim, March 2012, <http://www.inria.fr/centre/paris-rocquencourt/recherche/la-demi-heure-de-science/2012/database-cryptography>.
- Presentation at the “Colloque du labex DIGICOSME”, Orsay, Architectures pour des grandes bases de données sécurisées, Luc Bouganim, September 2012.
- Participation to the realization of a pedagogic video on Security and Safety, Luc Bouganim, October 2012.
- Participation to the Round Table at the 5th Open World Forum (OWF), Paris, Logiciels libres, culture et enseignement de l’informatique, Benjamin Nguyen, 2012.
- Invited talk at the “Les mardis du CRIDS”, Le projet CAPPRIS, Benjamin Nguyen, July 2012.

TREC Project-Team

9. Dissemination

9.1. Scientific Animation

9.1.1. TREC's seminar

The following scientists gave talks on Trec's seminar in 2012 (see <http://www.di.ens.fr/~trec/seminar.html> for details)

- **Emilie Coupechoux** (TREC/Lip6), PhD thesis defense /Dec 10, 2012/ Talking on: "Analyse de grands graphes aléatoires";
- **Mir Omid Haji Mirsadeghi** (TREC), PhD thesis defense /Jul 11, 2012/ Talking on: "Routage sur les graphes géométriques aléatoires";
- **Frederic Morlot** (TREC), PhD thesis defense /Jul 2, 2012/ Talking on: "Processus spatio-temporels en géométrie stochastique et application à la modélisation des réseaux de télécommunication";
- **Mathieu Feuillet** /Jun 7, 2012/ Talking on: "Scaling Analysis of a Transient Stochastic Network";
- **D. J. Daley** (The University of Melbourne) /May 24, 2012/ Talking on: "Dimension Walks and Schoenberg Spectral Measures for Isotropic Random Fields";
- **Florian Simatos** (Eindhoven University of Technology) /May 16, 2012/ Talking on: "Scaling limits of regenerative processes via the convergence of their excursions: some applications to queueing theory";
- **Chandramani Singh** (TREC) /Apr 18, 2012/ Talking on: "Optimal Message Forwarding in Delay Tolerant Networks with Multiple Destinations";
- **Holger-Paul Keeler** (Inria TREC) /Apr 5, 2012/ Talking on: "A Greedy Routing Model";
- **Alain Jean-Marie** (Inria MAESTRO) /Apr 3, 2012/ Talking on: "Variations on the Data Placement problem";
- **Hermann Thorisson** (University of Iceland) /Mar 16, 2012/ Talking on: "Unbiased shifts of Brownian motion";
- **Lenka Zdeborova** (Institut de Physique Theorique, CEA) /Mar 8, 2012/ Talking on: "Statistical-physics-based reconstruction in compressed sensing";
- **Gideon Weiss** (Haifa University) /Mar 1, 2012/ Talking on: "Skill based service systems";
- **Francis Comets** (Université Paris Diderot) /Feb 23, 2012/ Talking on: "Transmission d'information sous contraintes du capital d'émission";
- **Guenter Last** (Karlsruhe Institute of Technology) /Feb 21, 2012/ Talking on: "Fock space representation and variational analysis of Poisson functionals";
- **Sergei Zuyev** (Chalmers University of Technology) /Feb 21, 2012/ Talking on: "undefined";
- **Harpreet S. Dhillon** (UT Austin) /Feb 15, 2012/ Talking on: "Analysis of K-tier Heterogeneous Cellular Networks";
- **Bernadette Charron-Bost** (LIX) /Feb 2, 2012/ Talking on: "On the Transience of Linear Max-Plus Dynamical Systems";
- **Christian Hirsch** (University of Ulm, Germany) /Jan 23, 2012/ Talking on: "Connectivity and first-passage percolation of random geometric graphs related to minimal spanning forests";

9.1.2. Reading groups

- The reading group on Random Graphs was animated by A. Bouillard and A. Giovanidis; see <http://www.di.ens.fr/~bouillard/GdL/index.html>
- The reading group on Graphs, Algorithms and Probability is animated by Marc Lelarge; see <http://www.di.ens.fr/~lelarge/GdT-GAP.html>

9.2. Teaching – Supervision – Juries

9.2.1. Teaching

ENS Paris

- Undergraduate course (master level, DIENS) by M. Lelarge and M. Leconte, on Information Theory and Coding (24h + 24h of exercise session).
- Course on Communication Networks (master level, DIENS) by F. Baccelli, A. Bouillard and A. Bušić (24h + 24h of exercise sessions).
- Course on Network Modeling (master level, MPRI) by F. Baccelli and A. Bouillard (24h)
- Undergraduate course (master level, DIENS) by A. Bouillard and P. Brémaud, on Random Structures and Algorithms (35h + 28h of exercise session).
- Undergraduate exercise session (master level, DIENS) by A. Bouillard on formal languages, computability and complexity (12h).

ENS Cachan - Antenne de Bretagne

- Preparation to the oral exams of the agregation of mathematics (computer science option) by A. Bouillard (11h).

UPMC, Paris 6

- Graduate Course on point processes, stochastic geometry and random graphs (program "Master de Sciences et Technologies"), B. Błaszczyszyn and L. Massoulié (45h).
- Undergraduate course on conception of algorithms and applications (Licence Informatique, 3rd year), A. Bušić (24h)

Université de Versailles Saint-Quentin-en-Yvelines

- Graduate course on simulation (M2 COSY), A. Bušić (6h).

Université Paris Ouest Nanterre La Défense

- Network half of an undergraduate course (L3 Licence MIAGE) by M. Leconte on Systems and Networks (18h)

9.2.2. Supervision

- PhD: **Emilie Coupechoux**, "Analysis of large random graphs", started in September 2009, defended on December 10, 2012, adviser M. Lelarge, F. Baccelli; see [5].
- PhD: **Mir Omid Haji Mirsadeghi**, "Routing on Point Processes", started in 2009, defended on July 11, 2012, adviser F. Baccelli; see [6].
- PhD: **Frédéric Morlot**, "Mobility Models for Communication Networks", started in 2008, defended on July 2, 2012; adviser F. Baccelli; see [7].
- PhD in progress: **Tien Viet Nguyen**, "Random Packing Models", started in 2009, adviser F. Baccelli.
- PhD in progress: **Mathieu Leconte**, "Propagation d'information et recommandations dans les réseaux sociaux", started in January 2011, adviser M. Lelarge, F. Baccelli;
- PhD in progress: **Aurore Junier**, "Tuning parameters in routing protocols" started in September 2010, advisers A. Bouillard and C. Jard;

- PhD in progress: **Kumar Gaurav**, “Convex comparison of network architectures” started in October 2011, adviser B. Błaszczyszyn;
- PhD in progress: **Miodrag Jovanović**, “Evaluation and optimization of the quality perceived by mobile users for new services in cellular networks” started in January 2012, adviser B. Błaszczyszyn;
- PostDoc’s: Anastasios Giovanidis, Holger Paul Keeler, Chandramani Singh.

9.2.3. Juries

François Baccelli *PhD defence* of **Eduardo Ferraz** (Telecom ParisTech, February 2012).

Bartłomiej Błaszczyszyn *PhD defence* of **Kehao Wang** (Paris Sud, June 2012, reviewer), **Arash Behboodi** (Supélec, June 2012), **Thanh Tung Vu** (Telecom ParisTech, September 2012), **Salman Malik** (Inria/UPMC, November 2012), *associate-professor hiring-committee* at Département Informatique, Faculté des Sciences et Technologies, Université de Lorraine (Section 27, Poste 27 PR 072, May 2012).

Anne Bouillard *PhD defence* of **Laurent Jouhet** (ENS Lyon, november, 7th), *admission jury* at the ENS Cachan entrance exam.

9.3. Invitations and Participation in Conferences

François Baccelli

- Keynotes:
 - * Lecture at "Semaine des mathématiques dans l'académie Nancy-Metz, Institut Elie Cartan de Nancy" March 2012 <http://www.ac-nancy-metz.fr/semaine-des-mathematiques-du-12-au-18-mars-2012-31219.kjsp?RH=WWW>
 - * Lecture on stochastic geometry for the inauguration of the Simons Math+X Chair <https://simonsfoundation.org/funding/funding-opportunities/mathematics-physical-sciences/mathx/mathx-encouraging-interactions-2011-chair-recipient/>
 - * Keynote Lecture at Stochmod'12, Paris, June 2012, on stochastic geometry <http://www.lgi.ecp.fr/StochMod2012/pmwiki.php/Main/HomePage>
 - * Lecture at Collège de France, Paris, Dec. 2012, on the mathematics of peer-to-peer networks <http://www.college-de-france.fr/site/en-bernard-chazelle/seminar-2012-12-20-15h00.htm>
- Presentations in the following conferences or seminars:
 - * Stochastic Networks, MIT, June-2012, <http://stoch-nets-2012.lids.mit.edu/>
 - * Séminaire Inria at Silicon Valley, Paris, May 2012, <https://project.inria.fr/inria-siliconvalley/>
 - * GdR Isis Day, Telecom ParisTech, April 2012 <http://gdr-isis.fr/index.php?page=reunion&idreunion=163>.
 - * Workshop "Information Theory for Cooperative Networks", Institut Henri Poincaré, March 2012.
 - * GdR Géométrie Stochastique Conference, Rouen, March 2012, http://gdr-geostoch.math.cnrs.fr/workshop_Rouen/index.html
 - * IIT Madras, India, January 2012.
 - * IIS Bangalore, India, January 2012 http://math.iisc.ernet.in/pastevents-conf/invited_speakers.htm.

Bartłomiej Błaszczyszyn

- Keynotes:
 - * SpaSWiN 2012, Paderborn Germany, May 2012; <http://www.spaswin.org/>

- Presentations in the following conferences or seminars:
 - * GdR Géométrie Stochastique Conference, Rouen, March 2012; http://gdr-geostoch.math.cnrs.fr/workshop_Rouen/index.html
 - * WiOpt, Paderborn Germany, May 2012; http://wi-opt.cs.upb.de/WiOpt_2012/Home.html
 - * TREC inria@siliconvalley Seminar “Random Spatial Models in Communication Science” Inria, Paris, June 2012

Anne Bouillard

- Presentations in the following conferences or seminars:
 - * Valuetools 2012 (invited paper) + regular paper, Cargèse, October, 2012

Ana Bušić

- Presentations in the following conferences or seminars:
 - * Seminar at Algorithms and Theory group, Google, NY,
 - * C3 Guest Lecture Series, Electrical and Computer Engineering department, University of Florida http://ccc.centers.ufl.edu/?q=Ana_Busic,
 - * IEEE Conference on Decision and Control, Maui, USA <http://control.disp.uniroma2.it/cdc2012/>,
- Technical Program Committee member of Sigmetrics 2012. <http://www.sigmetrics.org/sigmetrics2012>

Emilie Coupechoux

- Presentations in the following conferences or seminars:
 - * Séminaire RAP, Rocquencourt (France), January 2012, <https://team.inria.fr/rap/seminars/>
 - * Journées Aléa, Marseille (France), March 2012, <http://lipn.univ-paris13.fr/alea2012/index.html>
 - * Séminaire LIP6, Paris (France), April 2012, <http://www.complexnetworks.fr/events/>
 - * Journées Rescom, Paris (France), November 2012, <http://rescom.inrialpes.fr/?p=410>
 - * Colloque ‘Réseaux d’interactions Plantes-Pollinisateurs’, Lille (France), December 2012, <http://math.univ-lille1.fr/~tran/journeesplantespollinisateursreseaux.html>

Anastasios Giovanidis

- Presentations in the following conferences or seminars:
 - * IEEE Wireless Communications and Networking Conference (WCNC), Paris-France, April, 2012, <http://www.ieee-wcnc.org/2012/>
 - * 16th International ITG Workshop on Smart Antennas (WSA), Dresden-Germany, March, 2012, <http://wsa2012.com/>
 - * 21st International Symposium on Mathematical Programming (ISMP), Berlin-Germany, August, 2012, <http://ismp2012.mathopt.org/>

Mathieu Leconte

- Presentations in the following conferences or seminars:
 - * workshop Bridging statistical physics and optimization, inference and learning, École de Physique des Houches, February-12, <http://www.espci.fr/usr/fk/LESHOUCHES/home.htm>

- * workshop Journées ALÉA, CIRM at Marseille-Luminy, March-12, <http://lipn.univ-paris13.fr/alea2012/>
- * conference Sigmetrics, Imperial College London, June-12, <http://www.sigmetrics.org/sigmetrics2012/>

Marc Lelarge

- Keynotes:
 - * conference SIGMETRICS, London, UK <http://www.sigmetrics.org/sigmetrics2012/program.php>
- Presentations in the following conferences or seminars:
 - * Network Science in Electrical Engineering and Computer Science, Indian Institute of Science, Bangalore. <http://www.icts.res.in/program/details/283/>
 - * conference SODA, Kyoto, Japan <http://www.siam.org/meetings/da12/>
 - * Stochastic Analysis Seminar, Oxford, UK <http://www.oxford-man.ox.ac.uk/events/past/seminar/all>
 - * Models of sparse graphs and network algorithms, Banff, Canada <http://www.birs.ca/events/2012/5-day-workshops/12w5004>
 - * conference IEEE INFOCOM, Orlando, USA <http://www.ieee-infocom.org/2012/>
 - * NIPS 2012 Workshop: Algorithmic and Statistical Approaches for Large Social Networks, Lake Tahoe, USA <http://www.datalab.uci.edu/nips-workshop-2012/>

Frédéric Morlot

- * Presentations in the following conferences or seminars:
 - + SpaSWiN, Paderborn Germany, May 2012; <http://www.spaswin.org>

WILLOW Project-Team

9. Dissemination

9.1. Scientific Animation

- + Conference and workshop organization
 - K. Alahari, Co-organizer of the Workshop on Higher-Order Models and Global Constraints in Computer Vision in Computer Vision at ECCV 2012. <https://sites.google.com/a/ttic.edu/eccv-2012-workshop-hipot/>
 - I. Laptev, J. Sivic, Co-organizers of the First International Workshop on Action recognition and Pose Estimation in Still Images at ECCV 2012. <http://vision.stanford.edu/apsi2012>
 - A. Zisserman, Co-organizer of the PASCAL Visual Object Classes Challenge 2012 (VOC2012). <http://pascallin.ecs.soton.ac.uk/challenges/VOC/voc2012/>
 - A. Zisserman, Co-organizer of the PASCAL VOC 2012 workshop at ECCV 2012. <http://pascallin.ecs.soton.ac.uk/challenges/VOC/voc2012/workshop/index.html>
- + Editorial Boards
 - International Journal of Computer Vision (I. Laptev, J. Ponce, J. Sivic and A. Zisserman).
 - Image and Vision Computing Journal (I. Laptev).
 - Foundations and Trends in Computer Graphics and Vision (J. Ponce, A. Zisserman).
 - IEEE Transactions on Pattern Analysis and Machine Intelligence (K. Alahari, co-guest editor of a special issue).
- + Area Chairs
 - European Conference on Computer Vision (ECCV), 2012 (I. Laptev, J. Ponce, J. Sivic, A. Zisserman).
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2013 (I. Laptev, J. Ponce, J. Sivic).
 - IEEE International Conference on Computer Vision (ICCV), 2013 (J. Sivic)
- + Program Committees
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2012 (M. Cho, I. Laptev, J. Sivic, A. Zisserman).
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2013 (K. Alahari, M. Cho, V. Delaitre, O. Duchenne, A. Joulin, V. Kantorov).
 - European Conference on Computer Vision (ECCV), 2012 (K. Alahari, M. Cho, V. Delaitre, O. Duchenne, A. Joulin).
 - Asian Conference on Computer Vision (ACCV), 2012 (K. Alahari).
 - Indian Conference on Computer Vision and Pattern Recognition (ICVGIP), 2012 (K. Alahari).
 - IEEE International Conference on Robotics and Automation (ICRA), 2012 (J. Sivic)
 - International Conference on Neural Information Processing Systems (NIPS), 2012 (K. Alahari, A. Joulin, I. Laptev, J. Sivic).
 - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2012 (J. Sivic).
 - ACM International Conference on Computer Graphics and Interactive Techniques (SIGGRAPH), 2012 (J. Sivic).
 - ACM International Conference on Multimedia Retrieval (ICMR), 2012 (J. Sivic)
 - International Conference on Artificial Intelligence and Statistics (AISTATS), 2012, 2013 (A. Joulin).
 - International Conference on Machine Learning (ICML), 2013 (A. Joulin).
 - A. Zisserman, reviewer for ERC grant applications.

- + Prizes and distinctions:
 - Sr. Member, Institut Universitaire de France (J. Ponce).
 - Inria Prime d'excellence scientifique (I. Laptev, J. Sivic).
 - ENS Prime d'excellence scientifique (J. Ponce).
- + Other:
 - PostDoc selection committee, Inria Paris, 2012 (I. Laptev)
 - Commission de Développement Technologique, Inria Paris, 2012 (J. Sivic)
 - Director, ENS Department of Computer Science (J. Ponce)

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence : J. Ponce, "Introduction to computer vision", L3, Ecole normale supérieure, 36h.

Licence : M. Pocchiola and J. Ponce, "Geometric bases of computer science", 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.

Doctorat : I. Laptev, J. Ponce, J. Sivic and A. Zisserman were speakers at the Inria Visual Recognition and Machine Learning Summer School <http://www.di.ens.fr/willow/events/cvml2012/>, Grenoble, 15h.

Doctorat : I. Laptev, speaker at the AERFAI Summer School on pattern recognition in multimodal human interaction, Vigo, Spain, 4h.

Doctorat : I. Laptev, speaker at the Human Activity and Vision Summer School, Inria Sophia-Antipolis, France, 2h.

9.2.2. Supervision

PhD : Oliver Whyte, "Removing Camera Shake Blur and Unwanted Occluders from Photographs" [5], École normale supérieure de Cachan, defended on March 15, 2012, J. Ponce, J. Sivic and A. Zisserman.

PhD : Y-Lan Boureau, "Learning Hierarchical Feature Extractors For Image Recognition" [1], New York University, September 2012, J. Ponce.

PhD : Muhammad Muneeb Ullah, "Supervised Statistical Representations for Human Action Recognition in Video" [4], Université de Rennes 1, defended on October 23, 2012, I. Laptev and P. Pérez.

PhD : Olivier Duchenne, "Non-rigid alignment methods for object recognition" [2], École normale supérieure, defended on November 29, 2012, J. Ponce.

PhD : Armand Joulin, "Convex optimization for cosegmentation" [3], École normale supérieure, defended on December 17, 2012, F. Bach and J. Ponce.

PhD in progress : Louise Benoît, started in 2009, J.Ponce.

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 : 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 : Guillaume Seguin, "Human action recognition using depth cues", started in 2010, J. Sivic and I. Laptev.

PhD in progress : Marc Sturzel, started in 2008, J. Ponce, A. Zisserman.

9.2.3. *Juries*

- + PhD thesis committee:
 - Roland Angst, ETH Zurich, 2012 (J. Ponce).
 - Adrien Gaidon, Inria Rhone-Alpes, 2012 (I. Laptev).
 - Pyry Matikainen, CMU, 2012 (I. Laptev).
 - Olivier Duchenne, ENS Ulm, 2012 (J. Ponce).
 - Armand Joulin, ENS Ulm, 2012 (J. Ponce).
 - Gaurav Sharma, University of Caen, 2012 (J. Ponce).
 - Oliver Whyte, ENS Cachan, 2012 (J. Ponce, J. Sivic, A. Zisserman).
 - Muhammad Muneeb Ullah, ENS Cachan, 2012 (I. Laptev).
- + HDR thesis committee:
 - Florent Perronnin, Université Joseph Fourier. (J. Ponce).
- + Other:
 - "Jury prix Gilles Kahn" for best French PhD in computer science in November 2012 (J. Ponce).

9.3. Inria Visual Recognition and Machine Learning Summer School 2012

<http://www.di.ens.fr/willow/events/cvml2012>

I. Laptev and J. Sivic (together with C. Schmid, Inria Grenoble) co-organized a one week summer school on Visual Recognition and Machine Learning. The summer school, hosted by Inria Grenoble, attracted 181 participants from 34 countries (22% France / 48% Europe / 30% other countries (including Australia, Brazil, Canada, China, India, Iran, Israel, Japan, Malaysia, Mexico, Saudi Arabia, Singapore, South Korea, Turkey and USA)), and included Master students, PhD students as well as Post-docs and industrial participants. The summer school provided an overview of the state of the art in visual recognition and machine learning. Lectures were given by 14 speakers (6 USA, 1 UK, 1 Austria, 6 Inria / ENS), which included top international experts in the area of visual recognition (D. Forsyth, UIUC, USA; M. Hebert and A. Efros, CMU, USA; D. Ramanan, UC Irvine, USA, A. Torralba and A. Oliva, MIT, USA; A. Zisserman, Oxford, UK / WILLOW). Lectures were complemented by practical sessions to provide participants with hands-on experience with the discussed material. In addition, a poster session was organized for participants to present their current research.

The Fourth summer school in this series is currently in preparation for 2013 to be hosted by ENS Ulm and organized jointly by ENS and Inria Paris.

9.4. Invited presentations

- K. Alahari, Oxford Univ., Oxford, UK, Host: A. Zisserman, Sept. 2012.
- I. Laptev, 3rd AFCV Int. Workshop on Recent Trends in Computer Vision, Osaka, Japan, Jan. 2012.
- I. Laptev, 10th Workshop on Content Based Multimedia Indexing, Annecy, France, June 2012.
- I. Laptev, Oxford Univ., Oxford, UK, Host: A. Zisserman, Sept. 2012.
- I. Laptev, First Croatian Workshop on Computer Vision, Zagreb, Croatia, Sept. 2012.
- I. Laptev, 3rd IST Austria Symposium on Computer Vision and Machine Learning, Vienna, Austria, Oct. 2012.
- I. Laptev, Carnegie Mellon University, USA, Host: A. Efros, November 2012.
- J. Ponce, 2nd ACCV Workshop on e-Heritage, Daejeon, South Korea, Nov. 2012.
- J. Ponce, ETRI, Daejeon, South Korea, Nov. 2012.
- J. Ponce, "Let's imagine the future", Inria Rennes, France, Nov. 2012.
- J. Sivic, Google, USA, Hosts: H. Adam and H. Neven, August 2012
- J. Sivic, UC Berkeley, USA, Host: J. Malik, August 2012
- J. Sivic, Simon Fraser University, Canada, Host: G. Mori, August 2012
- J. Sivic, GdR ISIS workshop, Telecom ParisTech, Host: F. Lafarge, October 2012
- J. Sivic, First Int. Workshop on Visual Analysis and Geo-Localization of Large-Scale Imagery, ECCV 2012, October 2012.
- J. Sivic, Int. Workshop on Search Computing, Brussels, Host: A. Joly, September 2012.
- J. Sivic, Carnegie Mellon University, USA, Host: A. Efros, December 2012.

9.5. Popularization

- The work "What Makes Paris Look like Paris" on the automatic mining of visual architectural elements (Doersch *et al.* SIGGRAPH [6]) has received broad press coverage including magazines [The Wall Street Journal](#) and [NewScientist](#).
- The Pompeii project was featured in the special issue of "Cahiers Science & Vie", on "the lost worlds" ("les mondes perdus"), N°130, June 2012.