



RESEARCH CENTER  
Saclay - Île-de-France

FIELD

Activity Report 2012

# Section Dissemination

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## AMIB Project-Team

# 7. Dissemination

## 7.1. Scientific Animation

### 7.1.1. French Community

**Participants:** Patrick Amar, Jérôme Azé, Julie Bernauer, Sarah Cohen-Boulakia, Alain Denise, Christine Froidevaux, Sabine Peres, Yann Ponty, Mireille Régnier, Jean-Marc Steyaert.

The whole team is involved in GDR-BIM (Molecular Bioinformatics, <http://www.gdr-bim.u-psud.fr/>). J. Azé is the webmaster. Alain Denise is a member of the Scientific Committee. Ch. Froidevaux and S. Cohen-Boulakia participate to the subdomain *Knowledge Representation, Ontologies, Data Integration and Grids*.

A. Denise, Y. Ponty and M. Régnier participate into the subdomain Sequence Analysis and to COMATEGE subgroup of GDR- IM (Informatique Mathématique, <http://www.gdr-im.fr/>)

A. Denise, Y. Ponty, J.-M. Steyaert, and M. Régnier are involved in the ALEA working group (<http://igm.univ-mlv.fr/~nicaud/webalea/>) of the GDR-IM (Informatique Mathématique, <http://www.gdr-im.fr/>).

### 7.1.2. Seminars and visits

#### 7.1.2.1. Amib seminars

We received in our weekly seminar: A. Thévenin (Bielefeld University), A. Sim (Bioinformatics Institute, A\*STAR Singapore), J. Andreani-Feuillet (CEA, Saclay), R. Fonseca (University of Copenhagen), P. Clote (Boston College), J. Waldispuhl (McGill University), Robert Giegerich (Bielefeld University), J-C. Almeida (Lisbonne), Y. Okamoto (Nagoya University), N. Malod-Dognin (INRIA Sophia-Antipolis), V. Boeva (Institut Curie, Paris), L. Pereyaslavets (Stanford University), X. Huang (HKUST).

#### 7.1.2.2. Other seminars

P. Amar ran a workshop at the *Modelling Complex Biological Systems in the Context of Genomics*. Spring school at Évry. He has been invited to give a talk at the Ecole de Printemps 2012 de la Société Francophone de Biologie Théorique on *Comparative study of some methods for simulation of biochemical reactions*.

J. Azé has been invited to present his work in the field of Protein-Protein Interaction and Docking to the Dalember's seminars of Paris-Sud.

J. Bernauer gave a talk at the Inria@SiliconValley Workshop BIS2012 in May in Paris. She gave an invited talk at the Computational Structural Biology workshop at HKUST in August (Hong-Kong) at SSRL (Stanford Synchrotron Radiation Lightsource) in November (SLAC, Stanford, USA).

S. Cohen-Boulakia has been invited to participate to the Dagstuhl seminar on *Principles on Provenance*. She has been invited to present the current challenges and opportunities in the field of *Data Integration in the Life Sciences at Internet Memory*.

A. Denise gave an invited keynote on combinatorics and random generation in the context of bioinformatics at the GASCom 2012 conference (Bordeaux).

S. Peres has been invited to give a talk to the Dagstuhl seminar 12462 on *Symbolic Methods for Chemical Reaction Networks*. She gave a talk to *Modelling Complex Biological Systems in the Context of Genomics*. at Évry and to *The 4th JFLI-LRI-NII Workshop on Consequence Finding and Satisfiability Testing in Distributed Environments and Systems Biology* at Orsay.

Y. Ponty gave an invited keynote on RNA visualization at the EMBL-hosted conference *VIZBI'12* (Heidelberg, Germany), three invited talks at the *Benasque RNA workshop* (Spain), and an invited talk at the SeqBio'12 colloquium (LIGM, Marne La Vallée, France).

M. Régnier gave an invited talk at the Conference “en l’honneur d’ Alain Guenoche”, CIRM, Marseille, France.

#### 7.1.2.3. *International exchanges*

J. Bernauer and M. Régnier visited H. van den Bedem at SSRL (SLAC) and M. Levitt at Stanford University (USA). J. Bernauer visited the Huang group at HKUST (Hong-Kong) and the Bujnicki lab at IIMCB (Warsaw, Poland).

M. Régnier and D. Iakovishina visited IoGene (Moscow). M. Régnier visited USC (M. Waterman) and UC Berkeley (P. Novichkov and E. Purdom).

S. Cohen-Boulakia visited the Information Management Group at the University of Manchester (C. Goble and N. Paton) to initiate collaboration on Data Integration for the Life Sciences (including provenance in scientific workflows).

Katsumi Inoue’s group visited AMIB group during the 4th JFLI-LRI-NII Workshop on "Consequence Finding and Satisfiability Testing in Distributed Environments and Systems Biology" (19th - 20th, November 2012).

#### 7.1.3. *Program Committee*

P. Amar was chairman of the organising committee, and a member of the scientific committee as well, for the conference "Modelling Complex Biological Systems in the context of genomics", Evry, May 2012. (<http://epigenomique.free.fr/en>).

J. Azé and C. Froidevaux served as PC members for the conference EGC 2012 (Extraction et la Gestion des Connaissances, Bordeaux).

S. Cohen-Boulakia served as PC member for: ICDE 2012 22 (27th I 2012 222tnf. on Data Engineering, Washington, USA), SWEET 2012 (Int. workshop on Scalable Workflow Enactment Engines and Technologies, Scottsdale, USA) and BDA 2012 (Bases de Données Avancées, Clermont-Ferrand).

S. Cohen-Boulakia and C. Froidevaux served as PC member for DILS 2012 (Int. workshop on Data Integration in the Life Sciences, University of Maryland, USA).

A. Denise is a member of the editorial board of *Technique et Sciences Informatiques*.

F. D’Alche-Buc, C. Froidevaux, and Y. Ponty served as PC members for JOBIM 2012 (Journées Ouvertes en Biologie, Informatique et Mathématiques, Rennes).

Ch. Froidevaux served as member of the program committee of JOBIM’12 bioinformatics conference.

She was PC member of the following international workshops and conferences: CMBS 2012 (25th International Symposium on Computer-Based Medical Systems, Rome, Italy), NETTAB’2012 (12th International Workshop on Network Tools and Applications in Biology, on Integrated Bio-Search, Como, Italy) ICCS 2012 (Workshop on Biomedical and Bioinformatics Challenges to Computer Science, Omaha, USA) and ISMB 2012 (Applied Bioinformatics area, Long Beach, USA).

J. Bernauer, Y. Ponty and M. Régnier served as PC members for WRSBS 2012 (1st International Workshop on Robustness and Stability of Biological Systems and Computational Solutions, Orlando, USA).

Y. Ponty, M. Régnier, and J.-M. Steyaert served as PC members for BICOB 2012 (4th International Conference on Bioinformatics and Computational Biology, Las Vegas, USA).

S. Peres served as PC member for ECCB 2012 (European Conference on Computational Biology 2012, Basel, Switzerland).

#### 7.1.4. *Research administration*

Y. Ponty is an elected member of the *Comité national du CNRS* (6th section – Foundations of Computer Science and CID 51 –Bioinformatics).

J. Bernauer is member of the IDEX Paris - Saclay Groupe de travail Sciences du Vivant.

A. Denise was a member of the *Comité national du CNRS* (7th section – and CID 43 –Bioinformatics) until September 2012. He is an expert for the *Direction Générale de la Recherche et l'Innovation* (DGRI) of the Research Ministry. He is a member of the Scientific Commission of the Inria-Saclay reserach center.

Ch. Froidevaux has been head of the Computer Science Department at the University Paris Sud until the end of January 2012 and is head of the Bioinfo group at LRI.

M. Régnier is a deputy-member of DIGITEO program committee.

J.-M.Steyaert is a member of the Board of Administrators of Polytechnique.

## 7.2. Teaching - Supervision - Juries

### 7.2.1. Teaching

The Master of Bioinformatics and Biostatistics, which is a joint master between University Paris-Sud and Ecole Polytechnique <http://www.bibs.u-psud.fr>, is co-headed by members of the group.

J.-M. Steyaert organizes BIBS (M1 and M2) at Ecole Polytechnique. A. Denise has co-headed the Master (M1 and M2) at the University Paris Sud until end August. C. Froidevaux is co-heading it at the University since September 2012.

Most team members are teaching in this master.

Master BIBS: J. Bernauer, Informatique théorique et Programmation Python, 20h, M2, Université Paris-Sud, France

Cycle Ingénieur Polytechnicien: J. Bernauer, Modal Bioinformatique, 18h, 2ème année, École Polytechnique, France

Cycle Ingénieur Polytechnicien: J. Bernauer, PSC, encadrement, 2ème année, Ecole Polytechnique, France

Cycle Ingénieur Agro Paris Tech: J. Bernauer, Module AAB, cours invité, 3ème année, Agro Paris Tech, France

Master BIM: Y. Ponty, Modélisation et bioinformatique de l'ARN, 8h de cours, M2, Université Paris-Sud, France

Master BIBS: Y. Ponty, M. Regnier, J.-M. Steyaert, Combinatoire, Algorithmes, Séquences et Modélisation (CASM), 32h, M2, Université Paris-Sud, France

Doctorat : M. Régnier, Combinatorics on genome, 20h, El-Farabi University, Kazakhstan

Master : J.-M. Steyaert, X cycle ingénieur INF582- Datamining, 35h, M1, Ecole Polytechnique, France

Licence : J.-M. Steyaert, X cycle ingénieur Modal-BioInformatique, 45h, L3, Ecole Polytechnique, France

Master : J.-M. Steyaert, BIBS Algorithmique avancée et optimisation, 25h, M2, X-Orsay, M2, Ecole Polytechnique, France

Data Bases, 48h, M1 BIBS (Bioinformatics and BioStatistics), Paris-Sud University, France (C. Froidevaux)

Advanced Algorithmics, 48h, M1 BIBS (Bioinformatics and BioStatistics), Paris-Sud University, France (C. Froidevaux)

Integration and Analysis of heterogeneous data from the Web, 24h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (J. Azé, S. Cohen Boulakia, C. Froidevaux)

Advanced Data Bases and Data Mining, 42h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (S. Cohen Boulakia, C. Froidevaux).

Initiation to Research, 6h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University, France (C. Froidevaux)

Software Engineering for Bioinformatics, 48h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (P. Amar)

Modelling and Simulation of Biological Processes, 24h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (P. Amar)

Biological Networks and Systems Biology, 9h, M1 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (P. Amar)

RNAomics and RNA Bioinformatics, 12h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (A. Denise)

Theoretical Computer Science, 30h, M2 BIBS (Bioinformatics and BioStatistics), Paris-Sud University/École Polytechnique, France (A. Denise)

### 7.2.2. Supervision

HdR : Jérôme Azé, Prédiction d'Interactions et Amarrage Protéine-Protéine par combinaison de classifieurs, Paris-Sud University, 16/11/2012

PhD : Feng Lou, Algorithms for studying RNA secondary structures and sequence alignments, Univ. Paris-Sud, 30/01/2012, P. Clote (Boston) and A. Denise.

PhD : Philippe Rinaudo, Algorithmics of RNA structure-sequence alignment: a general and parameterized approach, Univ. Paris-Sud, 05/12/2012, D. Barth (Univ. Versailles) and A. Denise.

PhD in progress : Bryan Brancotte, Ranking biological and biomedical data: algorithms and applications, Université Paris Sud, 01/10/2012, S. Cohen-Boulakia and A. Denise

PhD in progress : Jiuqiang Chen, Mining and Integrating heterogeneous data in e-science environments, 10/09/2011, Université Paris Sud, S. Cohen-Boulakia and C. Froidevaux

PhD in progress: Adrien Guilhot-Gaudeffroy, Modelling and scoring of protein-RNA complexes, 01/10/2011, J. Azé, J. Bernauer, C. Froidevaux

PhD in progress: Daria Iakovishina, A Combinatorial Approach to Assembly Algorithms, 01/11/2011, M. Régnier

PhD in progress : Cécile Pereira, Bioinformatics approaches for a comparative study of metabolic networks and their evolution, 01/10/2011, A. Denise and O. Lespinet (IGM, Univ. Paris-Sud)

PhD in progress : Antoine Soulé, Evolutionary study of RNA-RNA interactions in yeast, 01/09/2012, J.-M. Steyaert, Y. Ponty, and J. Waldspühl (University McGill, Canada)

PhD in progress : Bo Yang, Bioinformatics approaches for studying the relations between RNA structure and pre-messenger RNA splicing, 01/10/2011, A. Denise and Fu Xiangdong (Wuhan University, China)

PhD in progress : Cong Zeng, Identification of structural motifs in messenger RNAs, 01/10/2011, A. Denise

PhD in progress : Mélanie Boudard, Game theory and stochastic learning for predicting the three-dimensional structure of large RNA molecules , 15/10/2012, J. Cohen (CNRS, Univ. Versailles) and A. Denise.

### 7.2.3. Juries

A. Denise served as referee and jury member for Sylvain Sené's HDR defence (Univ. Evry, November 2012), Amine Ghoulane's PhD defence (Univ. Bordeaux I, December 2012) and Romain Pogorelcnik's PhD Defence (Univ. Blaise Pascal - Clermont II, December 2012). He served as the head of the jury member in Leandro Montero's PhD defence (Univ. Paris-Sud, December 2012). He served as a jury member in the hiring committee for a *Maître de Conférence sur chaire CNRS* position at Ecole Centrale de Nantes.

C. Froidevaux was a referee for Johan Estellon's PhD defence (Univ. Grenoble). She served as a member of the *Comité de thèse* of Pauline Gloaguen (INRA Tours, Feb 2012) and as a jury member for the defence of her PhD (Univ. Tours, Dec 2012). She served as the head of the jury in Konstantinos Karanasos' PhD defence (Paris Sud, July 2012). She was member of the *HDR* de Jérôme Azé (Univ. Paris-Sud).

Ch. Froidevaux took part as an external jury member in the hiring committee of an Assistant Professor position at IGM (Univ. Paris Sud, Orsay). She is member of the *Commission Consultative de Spécialistes* (CCSU, 27th section) of the University Paris Sud.

M. Régnier served as a jury member in Jérémie Bourdon's HDR defence (Nantes University). She was a member of the hiring committee for *Maître de Conférence* position at Bordeaux University (LaBRI).

S. Peres served as a jury member in the PhD defense committee of Chamseddine KIFAGI at Sfax University (Tunisia).

Y. Ponty served as a jury member in the hiring committee for a *Maître de Conférence* position at Université de Versailles St Quentin. He served as a jury member in the PhD defense committee of Azadeh Saffarian at Université de Lille 1 (LIFL/Inria Lille).

### 7.3. Popularization

AMIB animated the INRIA booth, at the yearly "Nuit des Chercheurs" <http://events.polytechnique.fr/accueil/la-nuit-des-chercheurs/la-nuit-des-chercheurs-43774.kjsp> in September at Ecole Polytechnique. The topic was to illustrate the principles underlying RNA folding algorithms through playing combinatorial games.

Y. Ponty gave a presentation at *Unithé ou Café*, the monthly *popular science* event of sc Inria Saclay, on RNA folding using dynamic programming. He was interviewed by the *Interstices* web site on RNA folding algorithms, leading to a 12 minutes-long podcast. Y. Ponty was invited to give a tutorial on RNA visualization at the EMBL (Heidelberg, Germany)-hosted conference VIZBI' 12.

S. Cohen-Boulakia was invited to give a short tutorial on *Data Integration in the Life Sciences* at the national thematic school *Masses de données distribuées* (Summer School).



## AVIZ Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

AVIZ members are active worldwide in the domains of Visualization, Visual Analytics, and HCI.

### 9.1.1. Keynotes and Invited Talks

- Jean-Daniel Fekete: *Invited talk for the 25th anniversary of Fraunhofer IGD: Visual Analytics of Large Social Networks*, Darmstadt, Germany, Nov. 14, 2013
- Jean-Daniel Fekete: *Keynote for the Digiteo Forum 2013: "Au-delà des pelotes de fils : progrès et défis de la visualisation des réseaux sociaux"*, Polytechnique, France, Nov. 13 2012
- Jean-Daniel Fekete: *Keynote for CANVAS 2012 the CANadian Visual Analytics School 2012: Advances in Social Network Visualization*, Vancouver, CA, Jul 24, 2012
- Jean-Daniel Fekete: *Summer Course at the European Business Intelligence Summer School 2012: Visualizing and Exploring Complex Multidimensional Data*, Bruxelles, BE, Jul. 19, 2012
- Jean-Daniel Fekete: *Keynote for Visual Decision Forum 2012: Recherche en visualisation: que doit-on en attendre ?*, Paris, Jul. 5, 2012
- Jean-Daniel Fekete: *Keynote for EuroVA 2012: Infrastructures for Visual Analytics: You are in a maze of twisty little passages, all alike!* EuroVa, Vienna, Jun. 4, 2012.
- Jean-Daniel Fekete: *Séminaire muséologie: Interfaces innovantes tirant partie des métadonnées*, IRI Centre Pompidou, Paris, May 15
- Jean-Daniel Fekete: *Explorer les corpus : vue d'ensemble et navigation dans de larges corpus documentaires*, EHESS Paris, Mar. 5
- Jean-Daniel Fekete: *Visualisation interactive de réseaux sociaux : dernières avancées et défis*, ISC Lyon, Feb. 2012
- Jean-Daniel Fekete: *InfoVis/DataViz: Donner du sens à la révolution Big Data*, Microsoft TechDays, Paris, Feb. 2012
- Jean-Daniel Fekete: *Advances in Social Network Visualization*, University of Kent, School of Computing Seminar, Jan. 2012
- Jean-Daniel Fekete: *Data Visualisation, visualisation d'information : un nouveau langage visuel*. ENSAD, Paris. Jan. 2012
- Évelyne Lutton: *Tomographic 3D reconstruction using cooperative co-evolution*. MIBISOC, Parma. Feb. 2012
- Petra Isenberg: *Information Visualization: An Introduction to the Field and Applications for Statistics*; StatLearn 2012, Lille
- Petra Isenberg: *Perceptual Experiments for Information Visualization Design*; University of Granada, Spain
- Pierre Dragicevic: *Novel Interactive Visualizations for Social Networks* Colloque LabEx DigiCosme. Ecole Polytechnique. Sep, 13., 2012.

### 9.1.2. Scientific Associations

- Jean-Daniel Fekete is the president of the French Speaking HCI Association 2009–2014
- Evelyne Lutton is the president of the EA steering committee (<http://ea.inria.fr>),

- Evelyne Lutton is founding member of the « Task Force on Evolutionary Computer Vision and Image Processing » within the IEEE CIS Evolutionary Computation Technical Committee (ECTC),
- Evelyne Lutton is president of the french-WIE affinity group.

### **9.1.3. Conference Organization**

- Jean-Daniel Fekete will be general chair of the IEEE VIS 2014 conference in Paris,
- Jean-Daniel Fekete is in the Steering Committee of EuroVis 2012–2019,
- Jean-Daniel Fekete is in the Steering Committee of IEEE InfoVis 2011–2018,
- Jean-Daniel Fekete is member of the Conference Management Committee in charge of Data Analysis for ACM SIGCHI
- Petra Isenberg was on the Best Short Paper Committee for Eurographics European Conference on Visualization,
- Petra Isenberg was Publicity Chair for the ACM Conference on Tabletops and Interactive Surface,
- Petra Isenberg was Tutorials Chair for IEEE InfoVis 2012,
- Petra Isenberg and Tobias Isenberg co-organized the Workshop on Beyond Time and Error: Novel Evaluation Methods for Visualization (BELIV) at IEEE VisWeek,
- Tobias Isenberg is in the Steering Committees of NPAR and Computational Aesthetics.

### **9.1.4. Conference Program Committees**

- Pierre Dragicevic was member of the program committee for UIST 2012,
- Pierre Dragicevic was member of the program committee for 3DUI 2012,
- Pierre Dragicevic was member of the program committee for ErgoIHM 2012,
- Pierre Dragicevic was member of the program committee for CHI 2013,
- Jean-Daniel Fekete was member of the program committee for IEEE InfoVis 2012,
- Jean-Daniel Fekete was member of the program committee for EuroVis 2012,
- Jean-Daniel Fekete was member of the program committee for AVI 2012,
- Petra Isenberg was member of the program committee for EuroVis 2012,
- Petra Isenberg was member of the program committee for EuroVA 2012,
- Petra Isenberg was member of the program committee for CHI 2013,
- Tobias Isenberg was member of the program committee for ACM NPAR 2012,
- Tobias Isenberg was member of the program committee for Computational Aesthetics 2012,
- Tobias Isenberg was member of the program committee for EG EuroVis 2012,
- Tobias Isenberg was member of the program committee for EG EuroVis 2012 short papers,
- Tobias Isenberg was member of the program committee for Graphics Interface 2012,
- Tobias Isenberg was member of the program committee for 3DCHI 2012 (ACM CHI 2012 workshop on the 3<sup>rd</sup> Dimension of CHI),
- Évelyne Lutton was member of the program committee of EuroGP 2012,
- Évelyne Lutton was member of the program committee of EvoIASP 2012,
- Évelyne Lutton was member of the program committee of GECCO 2012,
- Évelyne Lutton was member of the program committee of CEC 2012,

### **9.1.5. Journal Editorial Board**

- Jean-Daniel Fekete was associate editor of the IEEE Transactions on Visualization and Computer Graphics

- Jean-Daniel Fekete was guest editor of IEEE Computer Graphics and Applications on the special issue on “Visualization Applications and Design Studies”
- Tobias Isenberg was associate editor of Elsevier Computers & Graphics
- Tobias Isenberg was guest editor of the special section of Elsevier Computers & Graphics for the best papers of the 2011 Joint Symposium on Computational Aesthetics, Non-Photorealistic Animation and Rendering, and Sketch-Based Interfaces and Modeling,
- Petra Isenberg and Tobias Isenberg are guest editors of a special issue of Sage Publishing’s Information Visualization on visualization evaluation.
- Pierre Dragicevic was co-Editor in Chief for the Journal d’Interaction Personne-System (JIPS).

### **9.1.6. Conference Reviewing**

3DUI IEEE Symposium on 3D User Interfaces: Pierre Dragicevic  
 AVI Advanced Visual Interfaces: Jean-Daniel Fekete, Petra Isenberg  
 BELIV Workshop on Beyond Time and Error: Novel Evaluation Methods for Visualization: Jean-Daniel Fekete, Petra Isenberg, Tobias Isenberg  
 CAe Tobias Isenberg  
 CEC IEEE Congress on Evolutionary Computation: Évelyne Lutton  
 CHI ACM Conference on Human Factors in Computing Systems: Pierre Dragicevic, Jean-Daniel Fekete, Petra Isenberg, Tobias Isenberg  
 CSCW ACM Computer Supported Cooperative Work: Petra Isenberg  
 EA Artificial Evolution: Évelyne Lutton  
 EICS ACM SIGCHI Symposium on Engineering Interactive Computing Systems: Jean-Daniel Fekete, Pierre Dragicevic  
 EG Eurographics Conference: Petra Isenberg and Tobias Isenberg  
 EuroGP European Conference on Genetic Programming: Évelyne Lutton  
 EuroVA Eurographics Symposium on Visual Analytics: Petra Isenberg  
 EuroVis Eurographics European Symposium on Visualization: Jean-Daniel Fekete, Petra Isenberg, Tobias Isenberg  
 EvoIASP Evolutionary Computation in Image Analysis and Signal Processing: Évelyne Lutton  
 EvoMusArt European Event on Evolutionary and Biologically Inspired Music, Sound, Art and Design: Évelyne Lutton  
 GECCO Genetic and Evolutionary Computation Conference: Évelyne Lutton  
 Graph Drawing Jean-Daniel Fekete, Benjamin Bach  
 Graphics Interface Tobias Isenberg  
 ICDE IEEE International Conference on Data Engineering: Jean-Daniel Fekete  
 IHM Interface Homme Machine IHM: Pierre Dragicevic, Jean-Daniel Fekete  
 InfoVis IEEE Conference on Information Visualization: Pierre Dragicevic, Petra Isenberg, Tobias Isenberg  
 ISVC International Symposium on Visual Computing: Petra Isenberg  
 ITS International Conference on Interactive Tabletops and Surfaces: Pierre Dragicevic, Petra Isenberg, Tobias Isenberg, Yvonne Jansen  
 MobileHCI Pierre Dragicevic  
 NISCO Nature Inspired Cooperative Strategies for Optimization: Évelyne Lutton  
 NordiCHI Nordic Forum for Human-Computer Interaction: Petra Isenberg  
 NPAR Tobias Isenberg

PacificVis IEEE Pacific Visualization Symposium: Petra Isenberg, Pierre Dragicevic  
 SIGGRAPH Pierre Dragicevic  
 TAVA Theory and Applications of Visual Analytics: Petra Isenberg  
 TEI Conference on Tangible Embedded and Embodied Interaction: Petra Isenberg  
 UbiComp International Conference on Ubiquitous Computing: Pierre Dragicevic  
 UIST ACM Symposium on User Interface Software and Technology: Pierre Dragicevic, Petra Isenberg  
 Tobias Isenberg, Yvonne Jansen  
 VAST IEEE Conference on Visual Analytics, Science, and Technology: Jean-Daniel Fekete, Petra  
 Isenberg, Tobias Isenberg

### 9.1.7. Journal Reviewing

DAMI Data Mining and Knowledge Discovery: Jean-Daniel Fekete  
 C&G Computers and Graphics: Petra Isenberg, Tobias Isenberg, Pierre Dragicevic  
 CG&A Computer Graphics and Applications: Petra Isenberg, Tobias Isenberg  
 GPEM Genetic Programming and Evolvable Machines: Évelyne Lutton  
 IJHCS International Journal of Human-Computer Studies: Petra Isenberg  
 TEC IEEE Transactions on Evolutionary Computation: Évelyne Lutton  
 TOCHI ACM Transactions on Computer-Human Interaction: Petra Isenberg, Pierre Dragicevic  
 TVCG IEEE Transactions on Visualization and Computer Graphics: Petra Isenberg, Pierre Dragicevic  
 Computer Graphics Forum Tobias Isenberg

### 9.1.8. Scientific Dissemination

- Samuel Huron and Jeremy Boy co-organized the “WIID” (Who Is Interaction Design?) conference at Centre Pompidou, Paris

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master:

- Module “Artificial Evolution” of ENSTA (first year, level M1, 21h, taught by Évelyne Lutton).
- Module “Complex Systems” of Agro-ParisTech (second year, level M2, 12h, taught by Évelyne Lutton).
- Module “Interactive Information Visualization” of Univ. Paris-Sud (M2, 18h, taught by Pierre Dragicevic, Jean-Daniel Fekete and Petra Isenberg),
- Module “Computer Graphics” of Univ. of Groningen (M2, taught by Tobias Isenberg),
- Module “Advanced Computer Graphics” of Univ. of Groningen (M2, taught by Tobias Isenberg),
- Module “Innovative Interactive Systems” of Univ. of Groningen (M2, taught by Tobias Isenberg).

### 9.2.2. Supervision

PhD in progress: Benjamin Bach, *Collaborative Visualization of Large Web-based Linked Datasets*, 01/2011, Emmanuel Pietriga and Jean-Daniel Fekete

PhD in progress: Nicolas Heulot, *A Study of The Interactive Process of Visual Data Mining for Multidimensional Data*, 09/2010, Michael Aupetit and Jean-Daniel Fekete

PhD in progress: Samuel Huron, *Navigation and Annotation of Heterogeneous Time-Stamped Data*, 12/2010, Jean-Daniel Fekete and Vincent Puig

PhD in progress: Yvonne Jansen, *Tangible Information Visualization*, 12/2010, Pierre Dragicevic and Jean-Daniel Fekete

PhD in progress: Charles Perin, *Visualization and Collaborative Control of Massive Multi-Structured Temporal Data*, 10/2011, Frédéric Vernier and Jean-Daniel Fekete

PhD in progress: Jeremy Boy, *Visualization for the People*, 01/2012, Françoise Detienne and Jean-Daniel Fekete

PhD in progress: Moritz Gerl, *Non-Photorealistic and Illustrative Rendering*, Tobias Isenberg

PhD in progress: Lingyun Yu, *Interactive Computer Graphics*, Tobias Isenberg

### 9.2.3. *Juries*

- Jean-Daniel Fekete was reviewer for Thomas Mirlacher's PhD: "Model-based engineering of animated interactive systems for the interactive television environment", Université de Toulouse, Dec. 2012
- Jean-Daniel Fekete was reviewer for David Auber's HdR: "Visualisation de graphes", Univ. of Bordeaux, Dec. 9 2012.
- Jean-Daniel Fekete was jury member for Micheline Elias's PhD: "Enhancing Human Interaction with Business Intelligence Dashboards", Ecole Centrale Paris (ECP), Oct. 2012
- Jean-Daniel Fekete was jury member for Michael Aupetit's HdR: "Approches topologiques pour l'analyse exploratoire de données et l'aide à la décision", 11 Jul . 2012
- Jean-Daniel Fekete was reviewer for Guillaume Artigan's PhD: "Visualisation Multi-Echelle de Graphes Clusterisés", Université de Montpellier 2, Apr. 2 2012
- Jean-Daniel Fekete was reviewer for Jean Simard's PhD: "Collaboration haptique étroitement couplée pour la déformation moléculaire interactive", Université Paris-Sud, Mar. 2012
- Tobias Isenberg was on the PhD committee for Dr. Stefan Flöring: KnoVA: A Reference Architecture for Knowledge-Based Visual Analytics; University of Oldenburg, Germany, Jul. 2012.

## **BYMOORE Exploratory Action**

### **6. Dissemination**

#### **6.1. Animation of the scientific community**

- 2013 International Symposium on Code Generation and Optimization (CGO), Program Committee member.
- 2012 International Symposium on Code Generation and Optimization (CGO), Program Committee member.
- 2012-present: International Symposium on Code Generation and Optimization (CGO), Steering Committee member.
- 2013 International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), Program Committee member.
- 2013 International Workshop on Neuro-Inspired Accelerators for Computing (NIAC), Co-Organizer.
- 2012 International Symposium on Computer Architecture (ISCA), Program Committee member.
- Associate Editor of IEEE Micro.

#### **6.2. Teaching - Supervision - Juries**

Master : Architecture course at Ecole Polytechnique (about 35 hours per year), France.

##### **6.2.1. Supervision**

PhD & HdR :

2012-present: Zidong Du.

2011-present: Shuangde Fang.

2011-present: Wenting He.

2010-present: Yuanjie Huang.

2010-present: Hengjie Li.

2009-2012: Yang Chen, now at Microsoft Research China.

## COMETE Project-Team

# 8. Dissemination

## 8.1. Animation of the scientific community

Note: In this section we include only the activities of the permanent internal members of Comète.

### 8.1.1. Editorial activity

Catuscia Palamidessi is:

Member of the Editorial Board of **Mathematical Structures in Computer Science**, published by the Cambridge University Press.

Member of the Editorial Board of the **Electronic Notes of Theoretical Computer Science**, Elsevier Science.

Co-editor (with Frank Pfenning) of the special issue of **Logical Methods in Computer Science** dedicated to selected papers of FoSSaCS 2013.

Co-editor (with Geoffrey Smith) of the special issue of **Mathematical Structures in Computer Science** dedicated to Quantitative Information Flow.

Co-editor (with Samson Abramsky and Michael Mislove) of the **special issue of Theoretical Computer Science** dedicated to selected papers of MFPS XXV. [33]

Co-editor (with Sebastian Mödersheim) of the **proceedings of TOSCA 2011**, Theory of Security and Applications. [34]

Co-editor (with Mark Ryan) of the proceedings of TGC 2012, Trustworthy Global Computing. [35]

Frank D. Valencia is:

Co-editor of the special issue of **Mathematical Structures in Computer Science** dedicated to the 18th International Workshop on Expressiveness in Concurrency.

Co-editor of the special issue of **Mathematical Structures in Computer Science** dedicated to the 17th International Workshop on Expressiveness in Concurrency.

Konstantinos Chatzikokolakis and Catuscia Palamidessi are:

Co-editors (with Sebastian Mödersheim) of the special issue of the **Journal of Computer Security** dedicated to selected papers of **TOSCA 2011** and **SecCo 2011**.

### 8.1.2. Steering Committees

Catuscia Palamidessi is member of:

**The Council of EATCS**, the European Association for Theoretical Computer Science. Since 2005.

**The Steering Committee of ETAPS**, the European Joint Conferences on Theory and Practice of Software. Since 2006.

**The IFIP Technical Committee 1** – Foundations of Computer Science. Since 2007.

**The IFIP Working Group 2.2** – Formal Description of Programming Concepts. Since 2001.

**The IFIP Working Group 1.7** – Theoretical Foundations of Security Analysis and Design. Since 2010.

Frank D. Valencia member of:

The steering committee of the International Workshop in Concurrency EXPRESS. Since 2010.

### 8.1.3. Invited Talks

Catuscia Palamidessi has given invited talks at the following conferences and workshops:

**Grande Region Security and Reliability Day**. Nancy, France. March 2012.

**COW 2012**. The 19th CREST Open Workshop on *Interference and Dependence* on 30st April - 1st May 2012.

**VECoS 2012**. 6th International Workshop on Verification and Evaluation of Computer and Communication Systems. CNAM, Paris, France. August 27-28, 2012.

### 8.1.4. Organization of workshops and conferences

Catuscia Palamidessi has served as PC co-chair (together with Mark Ryan) of **TGC 2012**, the 7th International Symposium on Trustworthy Global Computing. Newcastle, UK, 7-8 September 2012.

Catuscia Palamidessi has co-organized (together with Boris Köpf and Pasquale Malacaria) the **Dagstuhl seminar on Quantitative Security Analysis**. Dagstuhl, Germany, 25-30 November 2012.

### 8.1.5. Participation in program committees

Catuscia Palamidessi has been/is a member of the program committees of the following conferences:

**TGC 2013**. The 8th International Symposium on Trustworthy Global Computing. Buenos Aires, Argentina, 30-31 August 2013.

**ICALP 2013** Track B. The 40th International Colloquium on Automata, Languages and Programming. Riga, Latvia, 8-12 July 2013.

**CSF 2013**. The 26th IEEE Computer Security Foundations Symposium. Tulane University, New Orleans, Louisiana, USA, 26-28 June 2013.

**LICS 2013**. The Twenty-Eighth Annual ACM/IEEE Symposium on Logic in Computer Science. Tulane University, New Orleans, Louisiana, USA, 25-28 June 2013.

**FOSSACS 2013**. The 16th Int.l Conf. on Foundations of Software Science and Computation Structures. (Part of ETAPS 2013.) Rome, Italy, March 2013.

**SOFSEM 2013**. 39th International Conference on Current Trends in Theory and Practice of Computer Science. Špindlerův Mlýn, Czech Republic, January 26–31, 2013.

**CARDIS 2012**. The Eleventh Smart Card Research and Advanced Application Conference. Graz, Austria, 28-30 November 2012.

**QEST 2012**. International Conference on Quantitative Evaluation of SysTems. London, UK, September 2012.

**PPDP 2012**. International ACM SIGPLAN Conference on Principles and Practice of Declarative Programming. Leuven, Belgium, September 2012.

**CONCUR 2012**. 21st International Conference on Concurrency Theory. Newcastle, UK, September 2012.

**CSF 2012**. The 25th IEEE Computer Security Foundations Symposium. Cambridge MA, USA, June 2012.

**POST 2012**. First Conference on Principles of Security and Trust. Tallin, Estonia, March 2012.

Frank D. Valencia has been/is a member of the program committees of the following conferences and workshops:

**CONCUR 2013**. The 24th International Conference on Concurrency Theory. Buenos Aires, Argentina, 27-30 August 2013.

**EXPRESS 2012**: Combined 19th International Workshop on Expressiveness in Concurrency and 9th Workshop on Structural Operational Semantics. Newcastle upon Tyne, UK, 3 September 2012.

**ICE 2012**. The 5th International Workshop on Interaction and Concurrency Experience. Stockholm, Sweden, 16 June 2012.



Konstantinos Chatzikokolakis has been/is a member of the program committees of the following conferences and workshops:

**ISPEC 2013**: 9th International Conference on Information Security Practice and Experience.

**QAPL 2013**: 11th Workshop on Quantitative Aspects of Programming Languages.

**ESOP 2012**: 21th European Symposium on Programming.

**TGC 2012**: 7th International Symposium on Trustworthy Global Computing.

**ISPEC 2012**: 8th International Conference on Information Security Practice and Experience.

**QAPL 2012**: 10th Workshop on Quantitative Aspects of Programming Languages .

### 8.1.6. Participation in other committees

Catuscia Palamidessi serves in the following committees:

President of the selection committee for the **EATCS Best Paper Award** at the ETAPS conferences. Since 2006.

Member of the **EAPLS PhD Award** committee. Since 2010.

### 8.1.7. Organization of seminars

Frank D. Valencia, Luis Fernando Pino Duque, and Andrés Aristizábal are the organizer of the **Comète-Parsifal Seminar**. This seminar takes place weekly at LIX, and it is meant as a forum where the members of Comète and Parsifal present their current works and exchange ideas.

## 8.2. Service

Catuscia Palamidessi serves as:

Member of the Comité d'Orientation Scientifique et Technique, Groupe de travail Relation Internationales (COST-GTRI). Since November 2007.

Directrice adjointe du LIX, le Laboratoire d'Informatique de l'Ecole Polytechnique. Since April 2010.

Member of the Comité de These for Mathematics and Computer Science at the École Polytechnique. Since October 2007.

Reviewer for the projects proposal for the program PRIN, sponsored by the Italian MIUR ("Ministero dell'Istruzione, dell'Università e della Ricerca"). Since 2004.

Frank Valencia has served as:

Member of the Evaluation Committee of the LIX/Qualcomm postdoc grants for the year 2012.

## 8.3. Teaching

Master: Konstantinos Chatzikokolakis has been teaching the course "Concurrence" at the "Master Parisien de Recherche en Informatique" (MPRI) in Paris. Level M2. Total 12 hours.

Master: Miguel E. Andrés, Konstantinos Chatzikokolakis, and Catuscia Palamidessi have been teaching an advanced course on Quantitative Information Flow and on Differential Privacy at **RIO 2012**, the Summer School on Informatics Río Cuarto, Argentine. Total 20 hours. 13-18 February 2012.

Master. Frank D. Valencia has been teaching an advanced course on Process Modeling at **Master Program in Computer Science** of the Pontificia Universidad Javeriana de Cali, Colombia. Total 30 hours. A.Y. 2011-12.

PhD (2009-12) **Andrés Aristizábal**. Ecole Polytechnique. Grant CNRS/DGA. Title of the thesis: *Bisimulation Techniques and Algorithms for Concurrent Constraint Programming*. Defended on 17 October 2012. Co-supervised by Catuscia Palamidessi and Frank D. Valencia.

PhD in progress (2012-) **Marco Stronati**. Ecole Polytechnique. Grant EDX Monge. Co-supervised by Catuscia Palamidessi and Konstantinos Chatzikokolakis.

PhD in progress (2011-). Ecole Polytechnique and Chinese academy of Science, Beijing, China. Co-supervised by Catuscia Palamidessi and Huimin Li.

PhD in progress (2011-) **Nicolás E. Bordenabe**. Ecole Polytechnique. Grant Inria/DGA. Co-supervised by Catuscia Palamidessi and Konstantinos Chatzikokolakis.

PhD in progress (2011-) **Luis Fernando Pino Duque**. Ecole Polytechnique. Grant Inria/DGA. Co-supervised by Catuscia Palamidessi and Frank D. Valencia.

PhD in progress (2010-) **Sophia Knight**. Ecole Polytechnique. Grant Inria/CORDIS. Co-supervised by Catuscia Palamidessi and Frank D. Valencia.

PhD in progress (2009-) **Ivan Gazeau**. Ecole Polytechnique. Grant ANR. Co-supervised by Catuscia Palamidessi and Dale Miller.

### 8.3.1. PhD defenses

Catuscia Palamidessi has been reviewer for the thesis of the following PhD students:

James Jerson Ortiz Vega (Universidad del Valle, Cali, Colombia). Title of the thesis: *Formal Methods for the Specification and Verification of Distributed and Timed Systems*. Advised Juan Francisco Dias Frias. Defended in September 2013.

Thomas Given-Wilson (University of Technology, Sydney, Australia). Title of the thesis: *Concurrent Pattern Unification*. Advised by Barry Jay. Defended in August 2012.

Jacopo Mauro (University of Bologna, Italy). PhD thesis reviewer. Title of the thesis: *Constraints meet Concurrency*. Advised by Maurizio Gabbrielli. Defended in April 2012.

Catuscia Palamidessi has been member of the committee at the HDR defense of Daniele Varacca, University of Paris VII, December 2012.

## COMMANDS Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

### 9.1.1. Editorial boards, scientific societies

- F. Bonnans is Corresponding Editor of “ESAIM:COCV” (Control, Optimization and Calculus of Variations), and Associate Editor of “Applied Mathematics and Optimization”, “Optimization, Methods and Software”, and “Series on Mathematics and its Applications, Annals of The Academy of Romanian Scientists”.
- F. Bonnans is chairman of the SMAI-MODE group (the optimization group of the French Applied Mathematics Society).

### 9.1.2. Organization of conferences

The team members have been involved in the organisation of several meetings and conferences, within the SADCO project (<http://itn-sadco.inria.fr>). In particular, F. Bonnans and H. Zidani organised the workshop "Applied and Numerical Optimal Control", in Paris.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

F. Bonnans: Optimal control, 7h, M2, Ensta, France.

F. Bonnans: Continuous Optimization, 18h, M2, Ecole Polytechnique and U. Paris 6, France.

F. Bonnans: Numerical analysis of partial differential equations arising in finance and stochastic control, 24h, M2, Ecole Polytechnique and U. Paris 6, France.

H. Zidani: Optimal control, 14h, M2, Ensta, France.

H. Zidani: Numerical methods for front propagation, 21h, M2, Ensta France

### 9.2.2. Supervision

PhD & HdR

PhD: Giovanni Granato, Energy management for an electric vehicle with range extender. December 10, 2012, H. Zidani and F. Bonnans.

PhD in progress : Imène Ben-Latifa, Optimal multiple stopping and valuation of swing options in jump models. Oct. 2010, F. Bonnans and M. Mnif (ENIT, Tunis).

PhD in progress : Xavier Dupuis, Optimal control of populations; medical applications. Sept. 2010, F. Bonnans.

PhD in progress : Laurent Pfeiffer, Optimal control of large electrical networks. Sept. 2010, F. Bonnans.

PhD in progress: Zhiping Rao, Hamilton-Jacobi equations with discontinuous coefficients. Sept. 2010, H. Zidani and N. Forcadel.

PhD in progress: Athena Picarelli, First and Second Order Hamilton-Jacobi equations for State-Constrained Control Problems. Nov. 2011, O. Bokanowski and H. Zidani

PhD in progress: Cristopher Hermosilla, Feedback controls and optimal trajectories. Nov. 2011, H. Zidani.

PhD in progress: Mohamed Assellaou, Reachability analysis for stochastic controlled systems. Oct. 2011, O. Bokanowski and H. Zidani.

## DAHU Project-Team

## 7. Dissemination

### 7.1. Scientific Animation

Organization of workshops and conferences.

- Luc Segoufin organized an international workshop on finite model theory in Les Houches in May 14-18, 2012: <http://www.lsv.ens-cachan.fr/Events/fmt2012/>.
- Serge Abiteboul co-organized with Tova Milo (Tel Aviv) the WebDam-MoDaS Workshop on Web data management and Crowdsourcing, Eilat, Israel 2012
- Serge Abiteboul co-organized with P. Senellart (Telecom Paris) the Webdam “Data in the Wild” Workshop, Paris 2012

Program Committees.

- Serge Abiteboul: International Conference on Database Theory (ICDT’12)
- Serge Abiteboul: World Wide Web (WWW’2012)
- Luc Segoufin: Principle of Database systems (PODS’12).
- Cristina Sirangelo: International Conference on Database Theory (ICDT’13)
- Cristina Sirangelo: ICDT’13 Test of Time Award
- Cristina Sirangelo: 6th Alberto Mendelzon Workshop

Responsibilities.

- Luc Segoufin is since 2009 the coordinator of the european project FoX. Since 2010 he is a member of the steering committee of the Intl. Conf. on Database Theory (ICDT). Since 2010 he is part of the “bureau du comité des projets” à l’Inria Saclay. Since 2011 he is part of the scientific board of Inria. Since 2010 he is responsible of the groupe de travail “Complexité et Modèles Finis” du GDR “Mathématique et Informatique” (<http://www.gdr-im.fr/>).
- Serge Abiteboul is the principal investigator of the European Research Council Grant Webdam on Web Data Management. He is a member of the French Academy of Sciences and of the Academia Europea. He is chairman of the Scientific Council of Société d’Informatique de France, elected in 2012.

Larger audience. School "Imagine the Future in ICT", organized by ICDT lab. Two courses given by Serge Abiteboul: (i) Data sciences; (ii) Web search engines.

Nomination. Serge Abiteboul has been professor at College de France [21] till September 2012. He organized a 10 hours course on Web data management. He also organized a seminar on the topic with for guests: Moshe Vardi, Anastasia Ailamaki, François Bancilhon, Julien Masanès, Victor Vianu, Tova Milo, Georg Gottlob, Gerhard Weikum, Marie-Christine Rousset, Pierre Senellart.

### 7.2. Teaching - Supervision - Juries

#### 7.2.1. Teaching

Le module "Teaching" présente vos activités d’enseignement et d’encadrement à présenter comme suit :

Licence : Cristina Sirangelo, Bases de données, 30 heures équivalent TD, L3, École Normale Supérieure de Cachan, France

Doctorat : Cristina Sirangelo, Bases de données et sites Web dynamiques, 18 heures équivalent TD, École Normale Supérieure de Cachan, France

Doctorat : Cristina Sirangelo, Création de sites Web, 18 heures équivalent TD, École Normale Supérieure de Cachan, France

Licence : Serge Abiteboul, Base de données , ENS Cachan and ENS Paris

Master : Serge Abiteboul, Web data management, MPRI Paris

Licence : Émilien Antoine, Algorithmique et complexité, 32h, L3, Université de Paris-Sud, France

### **7.2.2. Supervision**

PhD & HdR :

PhD in Progress: Wojciech Kazana, enumeration of queries, 01/03/2010, Luc Segoufin

PhD in Progress: Nadime Francis, graph databases, 01/09/2011, Cristina Sirangelo and Luc Segoufin

PhD in progress : Émilien Antoine, Data management in social network, 01/10/2010, Serge Abiteboul

### **7.2.3. Juries**

- Luc Segoufin was on the HDR jury of Florent Madeleine at the university of Clermont-Ferrand.
- Luc Segoufin was on the HDR jury of Manuel Bordiski at the university of Paris 7.
- Cristina Sirangelo was on the jury for a MCF position at Ecole Normale Supérieure de Cachan

## **7.3. Popularization**

S.Abiteboul's radio talk shows: Science Publique (France Culture), Place de La Toile (France Culture), Autour de la question (RFI)

S.Abiteboul's interviews in the press:

- Construisons un Web des savoirs, Le Monde
- Le Web redéfinit sans cesse les échanges d'information, Le Figaro 2012
- L'enseignement de l'informatique en classes préparées, 01.Net (avec Colin de La Higuerra)
- Le Big Data est avant tout un effet de mode, O1Net
- Sur les liens entre labos publics et universitaires, 01.Net 2012.
- L'informatique est une science bien trop sérieuse pour être laissée aux informaticiens, Le monde.fr (avec Colin de la Higuera et Gilles Dowek)
- L'important sur Internet, c'est de trouver la bonne information, Lepoint.fr

## DEFI Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

- Grègoire Allaire is the President of SMAI (Société de Mathématiques Appliquées et Industrielles).
- Grègoire Allaire is a board member of Institut Henri Poincaré (IHP).
- Grègoire Allaire is the chairman of the Gaspard Monge Program in Optimization (PGMO) at the Jacques Hadamard Mathematical Foundation.
- Grègoire Allaire is a member of the following editorial boards: book series "Mathématiques et Applications" of SMAI and Springer, ESAIM/COCV, Structural and Multidisciplinary Optimization, Discrete and Continuous Dynamical Systems Series, Computational and Applied Mathematics, Mathematical Models and Methods in Applied Sciences (M3AS), Annali dell'Università di Ferrara.
- Houssein Haddar is a guest editor (jointly with Fioralba Cakoni) of a special issue of Inverse problems on transmission eigenvalues.
- Jing-Rebecca Li is an Associate Editor of the SIAM Journal on Scientific Computing.

#### 9.1.1. Conference organization

- G. Allaire (Chair), H. Haddar and O. Pantz are co-organizers of PICOF 6th edition (Inverse Problems, Control and Shape Optimization), April 2-4 2012.
- H. Haddar is the organizer of the minisymposium "Inverse Problems and Applications" at CANUM, 2012, 21 mai - 25 mai 2012, Superbesse.
- J.-R. Li is a co-organizer of the mini-symposium "Simulation and modeling applied to diffusion magnetic resonance imaging" at the SIAM Computational Science and Engineering Conference Feb 2013.

#### 9.1.2. Conference attendance

- Nicolas Chaulet, "Reconstruction of a perfectly conducting obstacle coated with a thin dielectric layer", PICOF'12, Palaiseau (France), 4-6/04/2012
- Nicolas Chaulet, "A factorization method for support characterization of an obstacle with a generalized impedance boundary condition", IPMS conference, Antalya (Turkey), 21-26/05/2012
- Olivier Pantz, "The dehomogenization method", Seminar University of Sciences of Tunis (November 2012)
- Olivier Pantz, Participation to the kickoff workshop of the ANR "Geometria", Lyon (October 2012)
- Olivier Pantz, "Numerical Simulation of the Dynamic of Red Blood Cells" Colloquium MAP5, University Paris-Descartes (February 2012)
- Grègoire Allaire, 83rd Annual Meeting of GAMM, Darmstadt (march 2012).
- Grègoire Allaire, Conference Dynacomp, Arcachon (may 2012).
- Grègoire Allaire, Workshop "Exotic Structures and Homogenization", APM12, Saint Petersburg (july 2012).
- Grègoire Allaire, Conference "variational models and methods for evolution", Levico (september 2012).
- Houssein Haddar, Canum, 2012, 21 mai - 25 mai 2012, Superbesse
- Houssein Haddar, Congrès de Méthodes numériques et Modélisation ENIT-LAMSIN, Tunis, 13-15 December 2012.

- Dinh Liem Nguyen, International Conference on Inverse Problems and Related Topics 2012, October 21-26, 2012, Southeast University, Nanjing, China.
- Dinh Liem Nguyen, Conference Inverse Days 2012, December 17-20, 2012, University of Jyväskylä, Jyväskylä, Finland.
- Zixian Jiang, Poster at the conference on Inverse Problems, Control and Shape Optimization (PICOF 2012), Ecole Polytechnique, Palaiseau, France, April 2012.
- Zixian Jiang, Talk in the minisymposium *Inverse Problems in Biomedical engineering* at the International Conference on Inverse Problems and Related Topics (ICIP 2012), Southeast University, Nanjing, China, October 2012.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence: Nicolas Chaulet, *Equations différentielles et introduction à l'automatique*, ENSTA, Paris (1st year).

Licence: Nicolas Chaulet, *La méthode des éléments finis*, ENSTA, Paris (2nd year).

Licence: O. Pantz, Tutorial Classes in "Numerical analysis et Optimization", 64h, L3, École Polytechnique.

Licence: H. Haddar, Tutorial Classes in "Numerical analysis et Optimization", 64h, L3, École Polytechnique.

Licence: Grégoire Allaire teaches a semester course on numerical analysis and optimization in the second year (senior undergraduate level). See the web page: [http://www.cmap.polytechnique.fr/~allaire/cours\\_X\\_annee2.html](http://www.cmap.polytechnique.fr/~allaire/cours_X_annee2.html)

Master: O. Pantz, Tutorial Classes in "Structural Optimization" (G. Allaire) 14h, M1, École Polytechnique.

Master: O. Pantz, "Troisième Ateliers de Simulation Numérique" , 24h TD, M1, Univeristy of Ouragla, Algeria, December 2012.

Master: O. Pantz, Tutorial Classes and Courses in FreeFem++, 24h, M1, University Badji Mokhtar Annaba, Algeria, April 2012.

Master: O. Pantz, Project training in Numerical Analysis (1 project - "Shape optimization by the Level-Set Method in 3d"), M1, Ecole Polytechnique.

Master: Grégoire Allaire teaches a course on optimal design of structures in the third year (first year of a Master program). See the web page: [http://www.cmap.polytechnique.fr/~allaire/cours\\_X\\_majeure.html](http://www.cmap.polytechnique.fr/~allaire/cours_X_majeure.html)

Master: Grégoire Allaire teaches together with François Golse a course on transport and diffusion in the third year (first year of a Master program). See the web page: [http://www.cmap.polytechnique.fr/~allaire/cours\\_map567.html](http://www.cmap.polytechnique.fr/~allaire/cours_map567.html)

Master: Grégoire Allaire teaches together with François Alouges a course on homogenization in the fourth year (second year of a Master program). See the web page: <http://www.cmap.polytechnique.fr/~allaire/homogenization.html>

Master: Housseem Haddar teaches together with Antonin Chambolle a course on Mathematics of Inverse Problems (M2, AN&EDP, Paris 6 and Ecole Polytechnique).

### 9.2.2. Supervision

PhD in progress: L. Azem, Fracture and damage: Modeling and Simulation, Olivier Pantz (with Zorgati).

PhD in progress : H. T. Nguyen, Simplified models and inverse problems for diffusion MRI, 2011, Jing-rebecca Li (with Denis Grebenkov and Cyril Poupon).

PhD in progress : D. V. Nguyen, Efficient finite-element method to solve PDE problems in diffusion MRI, 2011, Jing-Rebecca Li (with Denis Grebenkov).

PhD in progress : F. Ouaki, On multi-scale numerical methods for multiphasic transport in porous media, 2010, Grégoire Allaire.

PhD in progress : G. Delgado, Optimal design of the draping of composite materials, 2010, Grégoire Allaire.

PhD in progress : G. Michailidis, On topology optimization with feasibility constraints, 2010, Grégoire Allaire (with F. Jouve)

PhD in progress : Z. Jiang, Eddy current probing of axisymmetric tubes, 2010, Housseem Haddar.

PhD in progress : G. Migliorati, Electrostatic Imaging with uncertain backgrounds, 2010, Housseem Haddar (with F. Nobile)

PhD in progress : L. Audibert, Non-destructive testing of concrete like materials, 2012, Housseem Haddar.

PhD in progress : T. Mercier, data assimilation for temprature estimates of nuclear fuel powerplant, 2012, Housseem Haddar.

PhD in progress: M. Chamaillard, Effective boundary conditions for thin periodic coatings, Ecole Polytechnique, 2011, Housseem Haddar (with P. Joly).

Master: O.Pantz, Internship co-supervisor with G. Allaire and D. Shmitt (EDF) of G. Gourlaouen (INSTN, École des Mines de Nancy) on "The Shape Optimization of a Sodium Fast Reactor Core", M2.

PhD: Y. Boukari, Méthodes innovantes en contrôle non destructif des structures: applications à la détection de fissures, Ecole Polytechnique and ENIT, January 2012, H. Haddar and F. Ben Hassen.

PhD: G. Giorgi, Mathematical tools for microwave mammography and prostate cryosurgery, University of Genova, April 2012, H. Haddar and M. Piana.

PhD: D. Nicolas, Couplage de méthodes d'échantillonnage et de méthodes d'optimisation de forme pour des problèmes de diffraction inverse, Ecole Polytechnique, November 2012, G. Allaire and H. Haddar.

PhD: N. Chaulet, Modèles d'impédance généralisée en diffraction inverse, Ecole Polytechnique, November 2012, L. Bourgeois and H. Haddar.

PhD: D.L. Nguyen, Spectral Methods for Direct and Inverse Scattering from Periodic Structures, Ecole Polytechnique, December 2012, H. Haddar and A. Lechleiter.

HdR: O. Pantz, Quelques problèmes variationnels: Optimisation de forme, contacts et analyse asymptotique, Université Paris Sud, December 2012.



## DISCO Project-Team

### 9. Dissemination

#### 9.1. Scientific Animation

- + C. Bonnet is a member of the IFAC Technical Committee 2.5 on Robust Control. She is also in the boards of the association *Femmes et Mathématiques* and of the consortium Cap'Maths. She was a member of the Program Committee of the Septième Conférence Internationale Francophone d'Automatique, CIFA 2012, Grenoble. She has been co-organizing the International Workshop 'Low-Order Controllers for Dynamical Systems' November 20th to November 22nd 2012, Supelec/L2S, Paris, France. She is co-chair of the NOC of the first IFAC Workshop on Control of Systems Modeled by Partial Differential Equations, Paris September 2013 and is co-organizing the workshop Modeling and Analysis of Cancer Cells Dynamics, Paris June 2013. She is co-organizer of the "Séminaire du Plateau de Saclay". She has been an evaluator for the French National Research Agency (ANR).
- + Frédéric Mazenc was Associate Editor for the conferences 2013 American Control Conference, Washington, 51th IEEE Conference On Decision and Control, Maui, Hawaii, USA, Septième Conférence Internationale Francophone d'Automatique, CIFA 2012, Grenoble. The 54th Chinese Control and Decision Conference, May 23-25, Taiyuan, China. He is a Member of the Mathematical Control and Related Fields editorial board. He is co-organizer of the 'Séminaire du Plateau de Saclay'. He was an invited speaker at the Workshop 'Observers and Controllers for Complex Dynamical Systems', November 20th to November 22nd 2012, Supelec/L2S, Paris, France. He is evaluator for the National Agency for the Italian Evaluation of Universities and Research Institutes (ANVUR). He is evaluator for Partnership Programme - Joint Applied Research Projects - PCCA of the Romanian National Council for Development and Innovation.
- + S. Olaru is a member of the program committee of the International Conference on System Theory, Control and Computing (2011, 2012) et CIFA 2012.  
He is also member of the IFAC Technical Committee 2.5 on Robust Control.
- + A. Quadrat is an Associate Editor of the journal "Multidimensional Systems and Signal Processing" (Springer). With Georg Regensburger, he organized an invited session "Algebraic and symbolic methods in mathematical systems theory" at the forthcoming "5th Symposium on System Structure and Control" (Grenoble, 4-6/02/2013). With Mohamed Barakat and Thierry Coquand, he also organized a forthcoming mini-workshop at Oberwolfach (12-18/5/2013). He proposed a PHC Parrot with the team of Ülle Kotta, Control Systems Department, Tallinn University, Estonia, which has just been accepted. He was invited to the seminar of the Equipe Calcul algébriques et systèmes dynamiques (CASYS), Laboratory of Jean Kuntzmann, University of Grenoble, 09/02, at the Sultan Qaboos University of Oman (10-18/06) where he gave a talk, at RWTH Aachen University (17-21/09), and at RICAM, Linz (16-18/12). Finally, with Hugues Mounier (University of Orsay, L2S) and Sette Diop (CNRS, L2S), he organized a seminar on algebraic systems theory at L2S (<http://pages.saclay.inria.fr/alban.quadrat/Seminar.html>).
- + G. Regensburger co-organized the session AADIOS (Algebraic and Algorithmic Aspects of Differential and Integral Operators Session) at ACA'12 (Sofia, 25-28/06). He was also a program committee of ADG 2012 (Edinburgh, 17-19/09) and publicity chair and web master of MACIS 2011 (Beijing, 19-21/10).
- + Guillaume Sandou is a member of the program committee of the 2013 IEEE Symposium on Computational Intelligence in Production and Logistics Systems, as a part of the 2013 IEEE Symposium Series on Computational Intelligence (Singapore)

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Licence : Le Ha Vy Nguyen, Applied Informatics in Physics, 16h, Universit Paris-sud  
 Licence : Le Ha Vy Nguyen, Signals, Systems, and Control, 38h, L3, Universit Paris-sud  
 Licence : Sorin Olaru, Numerical methods and optimization, 38heqTD, niveau L3, Suplec  
 Licence : Sorin Olaru, Signals and Systems, 12heqTD, niveau L3, Suplec  
 Licence : Guillaume Sandou, Signals and Systems, 63h, L3, Suplec  
 Licence : Guillaume Sandou, Mathematics and programming, 18h, L3, Suplec  
 Master : Le Ha Vy Nguyen, Information Processing and Source coding, 12h M1, Universit Paris-sud  
 Master : Sorin Olaru, Hybrid Systems, 32heqTD, niveau M1, Suplec  
 Master : Sorin Olaru, Automatic Control, 55heqTD, niveau M1, Suplec  
 Master : Sorin Olaru, Embedded Systems, 18heqTD, niveau M2, Ecole Centrale Paris  
 Master : Guillaume Sandou, Automatic Control, 55h, M1, Suplec  
 Master : Guillaume Sandou, Numerical methods, 28h, M2, Suplec  
 Master : Guillaume Sandou, Optimization, 18h, M2, Suplec  
 Master : Guillaume Sandou, Modelling and system stability analysis, 6h, M2, Suplec  
 Master : Guillaume Sandou, Control of energy systems, 22h, M2, Suplec  
 Master : Guillaume Sandou, Robust control and mu-analysis, 9h, M2, Suplec  
 Master : Guillaume Sandou, Systems identification, 32h, M2, ENSTA  
 Master : Guillaume Sandou, Embedded Systems, 18h, M2, Ecole Centrale Paris  
 Master : Guillaume Sandou, NonLinear systems, 11h, M2, Ecole des Mines de Nantes  
 Master : Guillaume Sandou, System Analysis, 22h, M2, Ecole des Mines de Nantes  
 Master : Guillaume Sandou, Multivariable control, 12h, M2, Evry University

### 9.2.2. Supervision

PhD in progress José Luis Avila Alonso, Mathematical Analysis of Acute Myeloid Leukemia, December 31st 2011. University Paris-Sud, STITS. Supervisors : C. Bonnet, J. Clairambault and S.I. Niculescu.

PhD Mounir Bekaik, Commande des systèmes non linéaires à retard, October 2010-December 2012. University Paris-Sud, STITS. Supervisor: Frédéric Mazenc. Co-Supervisors: Silviu I. Niculescu  
 Defence: 19 December 2012.

PhD in progress Thach Ngoc Dinh, Monotony, Interval Observers and Delays Systems, December 2011 . University Paris-Sud, STITS. Supervisor: Frédéric Mazenc. Co-Supervisors: Silviu I. Niculescu, Silvère Bonnabel.

PhD in progress Le Ha Vy Nguyen,  $H_\infty$  Stability and control of fractional delay systems, September 15th 2011. University Paris-Sud, STITS. Supervisor: C. Bonnet.

PhD in progress Nikola Stankovic, Commande tolérante aux défauts pour systèmes à retard, September 30th 2010, University Paris-Sud, STITS. Supervisor: Sorin Olaru Co-Supervisor: Silviu I. Niculescu

HdR : Guillaume Sandou, Contribution au développement de méthodologies pour l'Automatique fondées sur l'optimisation, Universit Paris-Sud, June 2012

### 9.2.3. Juries

C. Bonnet was a member of the jury of Nadia Maï's HDR entitled "De la dimension infinie la dimension prospective : variations autour du paradigme d'optimalité", Universit de Nice, july 2012.

A. Quadrat was a referee of Debasattam Pal's PhD thesis entitled "Algebro-geometric analysis of multidimensional ( $n$ -D) systems", IIT Bombay, and of Anja Korporal's PhD thesis entitled "Symbolic methods for generalized Green's operators and boundary problems", University of Linz. Moreover, he was a member of the jury of Alexandre Benoit's PhD thesis entitled "Algorithmique semi-numérique rapide des séries de Tchebychev", Ecole Polytechnique.

S. Olaru was a referee of Jennifer ZARATE FLOREZ's PhD thesis entitled 'Etudes de commande par dcomposition-coordination pour l'optimisation de la conduite de valles hydro-lectriques ', GIPSA-LAB and of Mohamed Yacine LAMOUDI's PhD thesis entitled "Distributed model predictive control for energy management in building",GIPSA-LAB.

## GALEN Team

## 9. Dissemination

### 9.1. Scientific Animation

- **Andreas Argyriou**
  - **Conference Committee:** International Conference on Machine Learning (ICML), Neural Information Processing Systems (NIPS), Workshop on Optimization for Machine Learning (in NIPS).
  - **Invited Seminars/Presentations:** Télécom ParisTech - FR, École des Mines de Paris - FR, Imperial College - UK, Queen Mary University London - UK.
- **Matthew Blaschko**
  - **Conference Committee:** International Conference on Robotics and Automation (ICRA), British Machine Vision Conference (BMVC - area chair), Asian Conference on Computer Vision (ACCV), Neural Information Processing Systems (NIPS), Medical Image Computing and Computer Assisted Intervention (MICCAI), Medical Computer Vision Workshop (at MICCAI), European Conference on Computer Vision (ECCV)
  - **Journal Reviewing Services:** Journal of Machine Learning Research, International Journal of Computer Vision, IEEE Transactions on Pattern Analysis and Machine Intelligence, Computer Vision and Image Understanding
  - **Invited Seminars/Presentations:** Katholieke Universiteit Leuven - BE, Stanford University - USA, Google - Mountain View, Institute of Science and Technology - Austria, Johns Hopkins University - USA, Schlumberger - Paris - FR, Ecole Normale Supérieure - FR.
- **Iasonas Kokkinos**
  - **Editorial Activities:** Image and Vision Computing Journal.
  - **Conference Committee:** IEEE International Conference on Computer Vision (CVPR - area chair), Perceptual Organization in Computer Vision (POCV - organizer) , Asian Conference on Computer Vision (ACCV), ACCV workshop on Detection and Tracking in Challenging Environments.
  - **Journal Reviewing Services:** IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Image Processing, Computer Vision and Image Understanding, SIAM Journal on Imaging Sciences, EURASIP Journal on Image and Video Processing.
  - **Invited Seminars/Presentations:** Ecole Normale Supérieure - FR, Carnegie Mellon University - USA, Johns Hopkins University - USA, Schlumberger - Paris - FR, National Technical University of Athens - GR.
- **Pawan Kumar**
  - **Conference Committee:** IEEE Conference on Computer Vision and Pattern Recognition (ICCV), European Conference on Computer Vision (ECCV), Advances in Neural Information Processing Systems (NIPS).
  - **Journal Reviewing Services:** IEEE Transactions on Pattern Analysis and Machine Intelligence, Journal of Machine Learning Research.
  - **Workshop and Tutorials Organization:** European Signal Processing Conference tutorial on *Learning with Inference for Discrete Graphical Models*, Biomedical Image Analysis Summer School.

- **Invited Seminars/Presentations:** University of Cambridge - UK, University of Oxford - UK, Institute of Science and Technology - AT, University of Heidelberg - DE, Stanford University - USA.
- **Nikos Paragios**
  - **Editorial Activities:** IEEE Transactions on Pattern Analysis and Machine Intelligence, International Journal of Computer Vision, Medical Image Analysis, Computer Vision and Image Understanding, Image and Vision Computing Journal, Machine Vision and Applications, SIAM Journal in Imaging Sciences.
  - **Conference Committee:** IEEE International Conference in Computer Vision (CVPR), IEEE Computer Vision and Pattern Recognition (ICPR - area chair), Medical Image Computing and Computer Assisted Intervention (MICCAI - area chair), IEEE International Symposium on Biomedical Imaging (ISBI), International Symposium on Visual Computing (ISVC), International Conference on Functional Imaging and Modeling of the Heart (FIMH), Medical Computer Vision Workshop (at MICCAI).
  - **Workshop and Tutorials Organization:** European Signal Processing Conference tutorial on *Learning with Inference for Discrete Graphical Models*, Biomedical Image Analysis Summer School.
  - **Journal Reviewing Services:** IEEE Transactions on Medical Imaging.
  - **Invited Seminars/Presentations:** University of Pennsylvania- USA, Stony-Brook University - USA, Clermont-Ferrand University - FR, IEEE International Symposium on Biomedical Imaging (ISBI) - ES, Medical Computer Vision Workshop (MICCAI) - FR, Centre Oscar Lambret - FR.
  - **Distinctions:** Member of the SAFRAN Conglomerate Scientific Council.

## 9.2. Teaching - Supervision - Committees

**Participants:** Matthew Blaschko, Iasonas Kokkinos, Pawan Kumar, Nikos Paragios.

### 9.2.1. Teaching

Master : Structure Prediction, 24, M1, Ecole Centrale de Paris [M. Blaschko]

Master : Discrete Optimization, 12, M1, Ecole Centrale de Paris [P. Kumar]

Master : Signal Processing, 36, M1, Ecole Centrale de Paris, France [I. Kokkinos]

Master : Computer Vision, 36, M1, Ecole Centrale de Paris, France [I. Kokkinos]

Master : Pattern Recognition, 24, M2, Ecole Centrale de Paris/Ecole Normale Supérieure-Cachan, France [I. Kokkinos]

Master : Advanced Mathematical Models in Computer Vision, 24, M2, Ecole Centrale de Paris/Ecole Normale Supérieure-Cachan, France [N. Paragios]

N. Paragios is in charge of the option Medical Imaging, Machine Learning and Computer Vision at the Department of Applied Mathematics of Ecole Centrale de Paris. This option consists of 7 classes in the above mentioned fields, 180 hours of teaching and is also directing the associated M.Sc. (M2) program of the ENS-Cachan in Applied Mathematics, Machine Learning and Computer Vision at Ecole Centrale de Paris.

### 9.2.2. Supervision

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

PhD in progress : Pierre-Yves Baudin, "Knowledge-based Segmentation of the Human Skeletal Muscle through Learning & Inference of Random Walks", 2009-2013, Nikos Paragios & Pierre Carlier (supervisors)

PhD in progress : Xiang Bo, "Pose-Invariant Knowledge-based Segmentation with Higher Order Graphs", 2009-2013, Nikos Paragios (supervisor)

PhD in progress : Haithem Boussaid, "Learning-based mid-level processing for computer vision and medical imaging", 2010-2014, Iasonas Kokkinos (supervisor)

PhD in progress : Enzo Ferrante, "2D-to-3D Multi-Modal Deformable Image Fusion", 2012-2015, Nikos Paragios (supervisor)

PhD in progress : Vivien Fecamp, "Linear-Deformable Multi-Modal Deformable Image Fusion", 2012-2015, Nikos Paragios (supervisor)

PhD in progress : Katerina Gkirtzou, "Kernels, Machine Learning & Biomedical Imaging-driven Computational Anatomy", 2009-2013, Nikos Paragios (supervisor)

PhD in progress : Nicolas Honnorat, "Detection, Segmentation & Tracking of Guide-Wires in Interventional Imaging", 2009-2013, Nikos Paragios (supervisor)

PhD in progress : Puneet Kumar, "Weakly Supervised Learning for Object Detection and Semantic Segmentation", 2010-2013, Pawan Kumar (supervisor)

PhD in progress : Helene Langet, "Sampling and Motion Reconstruction in Three-dimensional X-Ray Interventional Imaging", 2010-2013, Gilles Fleury & Nikos Paragios (supervisors)

PhD in progress : Fabrice Michel, "Metric Learning & Mono/Multi-modal Data Fusion", 2009-2013, Nikos Paragios (supervisor)

PhD in progress : Sarah Parisot, "Graph-based Detection, Characterization & Segmentation of Brain Tumors", 2010-2013, Nikos Paragios (supervisor)

PhD in progress : Stavros Tsogkas, "Learning-based mid-level processing for computer vision and medical imaging", 2011-2014, Iasonas Kokkinos (supervisor)

### 9.2.3. Committees

Nikos Paragios: Emmanuel Caruyer (Reviewer - University of Nice-Sophia Antipolis), Yangming Ou (external member - University of Pennsylvania), Karima Ouji (Chair - Ecole Centrale de Lyon), Olivier Whyte (Chair - ENS-Cachan), Xiang Zheng (external member - StonyBrook University)

## GECO Team

## 8. Dissemination

### 8.1. Scientific Animation

#### 8.1.1. Conference organization

- “INDAM meeting on Geometric Control and sub-Riemannian Geometry”, Cortona, Italy, May 21 - 25, 2012 (co-organizers: D. Barilari, U. Boscain, D. Prandi, M. Sigalotti).
- “Workshop Architecture Hybride et Contraintes”, Paris, June 4th-5th 2012 (co-organizer: M. Sigalotti)

#### 8.1.2. Editorial activity

- U. Boscain is Associate Editor of Journal of Dynamical and Control Systems, ESAIM Control, Optimisation and Calculus of Variations, Mathematical Control and Related Fields. He is also referee for Journal of Differential equations, AIMS Book series: Applied mathematics, SIAM J. Control Optim., Automatica, Rendiconti dei Lincei, Matematica ed Applicazioni, Physica A...and for the conferences ACC, CDC, MTNS...
- M. Sigalotti is Associate Editor of Journal of Dynamical and Control Systems. He is also referee for IEEE TAC, SIAM J. Control Optim., Automatica, MathSciNet, Journal of Functional Analysis...and for the conferences CDC, ACC, IFAC...

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Prizes

- Emmanuel Trélat obtained the Felix Klein Prize (see Section “Highlights of the year”).
- Jacek Jendrej won the *Prix du Centre de Recherche, Promotion 2009* by École Polytechnique for his stage made in 2012 under the supervision of Davide Barilari.

### 8.2.2. Supervision

PhD & HdR

PhD in progress: Dario Prandi, “Geometric control and PDEs”, 1/9/2011, supervisors: Ugo Boscain, Mario Sigalotti.

PhD in progress: Moussa Gaye, “Some problems of geometric analysis in almost-Riemannian geometry and of stability of switching systems”, 1/9/2011, supervisors: Ugo Boscain, Paolo Mason.

### 8.2.3. Juries

- U. Boscain was *rapporteur* of the PhD thesis of O. Cots (ICB, Dijon), defended the 20/11/2012.
- M. Sigalotti was *supervisor* of the PhD thesis of F. El Hachemi (CRAN, Nancy), defended the 5/12/2012.

## 8.3. Popularization

- D. Sugny cosigned a popularization paper with M. Lapert, Y. Zhang, M. Janich and S. J. Glaser for the “Actualités scientifiques du CNRS” (october 2012) on the optimal control in IMR (see [20]).
- M. Sigalotti was a speaker at the seminar Unithé of the Saclay CRI on November 2012. Title of the seminar: “Copier les algos du cerveau”.

## GEOMETRICA Project-Team

## 8. Dissemination

### 8.1. Animation of the scientific community

#### 8.1.1. Editorial boards of scientific journals

P. Alliez is an associate editor of *ACM Transactions on Graphics* and *Graphical Models*.

J-D. Boissonnat is a member of the editorial board of the *Journal of the ACM*, *Discrete and Computational Geometry*, *Algorithmica*, the *International Journal of Computational Geometry and Applications* and the electronic *Journal of Computational Geometry*. He is also a member of the editorial advisory board of the Springer Verlag book series *Geometry and Computing*.

F. Chazal is an associate editor of *Graphical Models* and *SIAM journal on Imaging Science*.

S. Oudot is co-editor with T. Dey of the special issue of *Discrete and Computational Geometry* on SoCG 2012.

Olivier Devillers is a member of the Editorial Board of *Graphical Models*.

Monique Teillaud is a member of the Editorial Boards of CGTA, *Computational Geometry: Theory and Applications*, and of IJCGA, *International Journal of Computational Geometry and Applications*.

M. Yvinec is a member of the editorial board of *Journal of Discrete Algorithms*.

P. Alliez, M. Teillaud (review manager until April 30th), and M. Yvinec are members of the CGAL editorial board.

#### 8.1.2. Conference program committees

Pierre Alliez was a program committee member of EUROGRAPHICS main conference, EUROGRAPHICS Symposium on Geometry Processing and International Workshop on Point Cloud Processing (a CVPR workshop).

Steve Oudot was a program committee member of SoCG 2012 (ACM Symposium on Computational Geometry).

Frédéric Chazal was a program committee member of ATMCS 2012 (5th conf. on Algebra and Topology: Methods, Computation and Science), SMAI-SIGMA 2012 conference, SMAI-MAIRCI workshop 2012, ICPRAM 2012 and 2013 (International Conference on Pattern Recognition Applications and Methods).

Frédéric Chazal is a program committee member of SoCG 2013 (ACM Symposium on Computational Geometry).

David Cohen-Steiner was a program committee member of the EUROGRAPHICS Symposium on Geometry Processing.

J-D. Boissonnat was a program committee member of "Mathematical Methods for Curves and Surfaces", Geometric Modeling and processing (GMP 2012), EUROGRAPHICS Symposium on Geometry Processing (SGP 2012)

Florent Lafarge was program chair of IEEE CVPR workshop on Point Cloud Processing and a program committee member of EUROGRAPHICS short papers and ISPRS congress.

#### 8.1.3. Steering committees

Monique Teillaud is a member of the Computational Geometry Steering Committee.

#### 8.1.4. Ph.D. thesis and HDR committees



Pierre Alliez was a referee and member of the Ph.D. defense committee of Nicolas Mellado (Inria Bordeaux) and David Bommès (RWTH Aachen).

Steve Oudot was a member of the Ph.D. defense committee of Arijit Ghosh (Inria Sophia-Antipolis).

Jean-Daniel Boissonnat was a member of the HDR defense of Eric Colin de Verdière (ENS Ulm)

Olivier Devillers was a member of the Ph.D. defense committee of Daniela Maftuleac (Univ. Marseille)

### 8.1.5. Inria committees

F. Chazal is the chair of the “Commission scientifique” at Inria Saclay - île de France.

Monique Teillaud is a member of the Inria Evaluation Committee.

She coordinated the working group on life of software of the evaluation committee. She is a member of the working group on the Inria software database (BIL).

She was a member of the national Inria CR2 and DR2 recruitment committees, as well as a member of the Inria Starting and Advanced Research Positions committees.

She is also a member of both Inria Sophia CDT (Committee for Technologic Development) and Inria national CDT.

Florent Lafarge is a member of the comité de Suivi Doctoral (CSD) of Inria Sophia.

Pierre Alliez is a member of the comité de médiation scientifique of Inria Sophia Antipolis - Mediterranee.

### 8.1.6. Other committees

J.-D. Boissonnat is a member of the working groups GP1 (Modèles et calcul) and GP2 (Logiciels et systèmes informatiques) de l’Alliance des sciences et technologies du numérique (Allistène).

J.-D. Boissonnat is a member of the AERES Board (Evaluation Agency for Research and Higher Education).

J.-D. Boissonnat chaired the Visiting Committee of the Geometric Modeling and Scientific Visualization Center of the King Abdullah University of Science and Technology (KAUST, Saudi Arabia, 2012).

J.-D. Boissonnat chaired the recruitment committee of ENS Lyon (PU n°4037 / CS 27)

F. Chazal is a member of the Scientific Council of AMIES (Agence pour les Mathématiques en Interaction avec l’Industrie et la Société)

F. Chazal is a member of the “Comité de pilotage” of the MAIRCI and SIGMA (ex-AFA) groups of the SMAI.

F. Chazal is a member of the “Bureau du Comité des Projets” at Inria Saclay.

M. Glisse is a member of the experts group of AFNOR for the standardization of the C++ language within the ISO/WG21 working group.

M. Teillaud was a member of the LIAMA Visiting Committee.

### 8.1.7. Conference organization

J.-D. Boissonnat chairs the scientific committee of the Jacques Morgenstern Colloquium.

Monique Teillaud organized the *Minisymposium on publicly available geometric/topological software* (with Menelaos Karavelas), Chapel Hill, USA, June 17&19, 2012.

Monique Teillaud was a member of the scientific committee of the workshop SIGMA’2012: Signal, Image, Geometry, Modelling, Approximation, Marseille, November 19-23.

CGAL developers meeting, Inria, December 17-21.

### 8.1.8. Web site

M. Teillaud is maintaining the Computational Geometry Web Pages <http://www.computational-geometry.org/>, hosted by Inria. This site offers general interest information for the computational geometry community, in particular the Web proceedings of the Video Review of Computational Geometry, part of the Annual Symposium on Computational Geometry.

## 8.2. Teaching

We give here the details of courses. Web pages of the graduate courses can be found on the web site :

<http://www.inria.fr/sophia/geometrical/>

Traitement numérique de la géométrie, Lorsque nos maths s'incarnent dans les ordinateurs, Monique Teillaud, 3h, Centre de Formation d'Apprentis de l'Industrie, Avignon.

“à quoi sert un triangle ?”, Monique Teillaud, 2x2h, Collège Le Prés des Roures, Le Rouret, in the framework of the national Week of Mathematics.

Master: Computational Geometry: from Theory to Applications, Steve Oudot, 20h ETD, M1, École Polytechnique.

Master: Géométrie algorithmique, Olivier Devillers, 13h ETD (2011-2012) 24h ETD (2012-2013), M1, Université de Nice.

Master: Algorithmes géométriques: théorie et pratique, Pierre Alliez, Olivier Devillers, and Monique Teillaud, 28h ETD, M2, Université de Nice.

Master: Computational Geometry Learning, J.-D. Boissonnat, F. Chazal and M. Yvinec, 25h, M2, MPRI (Paris).

Master: Computational Geometry: from Theory to Applications, S. Oudot, 20h, M1, école Polytechnique.

Master: Maillages 3D et applications, P. Alliez, 21h, Ecole des Ponts ParisTech (Paris).

Master: Mathématiques pour la géométrie, P. Alliez, 24h, EFREI (Ecole d'Ingénieur des Technologies de l'Information et de la Communication, Paris).

Doctorat: Geometric Inference, F. Chazal and D. Cohen-Steiner, 20h, Université Paris Sud (Orsay).

Master: Markov Random Fields, F. Lafarge, 9h, EPU Sophia Antipolis.

Master: Image segmentation, F. Lafarge, 11h, University of Nice Sophia Antipolis.

Doctorat: Introduction to Geometric Inference, F. Chazal, 3h, Neuchâtel University.

### 8.2.1. Ph.D. theses

Arijit Ghosh, Piecewise Linear Reconstruction and Meshing of Submanifolds of Euclidean Space, Université de Nice-Sophia Antipolis, May 30, 2012, J-D. Boissonnat.

Bertrand Pellenard, Generation of quadrangle meshes. Université de Nice-Sophia Antipolis, Dec 18, 2012, P. Alliez.

Claire Caillierie, Sélection de modèles pour l'inférence géométrique, Université Paris XI, started September 2008, Frédéric Chazal and Pascal Massart (in progress).

Alexandre Bos, Topological methods for geometric data classification, Université Paris XI, started September 2010, Frédéric Chazal and Steve Oudot (in progress).

Mikhail Bogdanov, Triangulations in non-Euclidean spaces, started October 1st 2010, Monique Teillaud (in progress).

Yannick Verdié, Urban scene analysis from unstructured point data, Université de Nice-Sophia Antipolis, started November 2010, Florent Lafarge (in progress).

Mickael Buchet, Topological and geometric inference from measures, Université Paris XI, started October 2011, Frédéric Chazal and Steve Oudot (in progress).

Ross Hemsley, Probabilistic methods for the efficiency of geometric structures and algorithms, started October 1st 2011, Olivier Devillers (in progress).

Clément Maria, Data structures for simplicial complexes, Université de Nice-Sophia Antipolis, started October 1, 2011, J-D. Boissonnat (in progress).

Simon Giraudot, Robust Shape Reconstruction, Université de Nice-Sophia Antipolis, started November 2011, Pierre Alliez (in progress).

Xavier Rolland-Névière, Robust watermarking of 3D Shape, Université de Nice-Sophia Antipolis, started November 2011, Pierre Alliez and Gwenael Doerr from Technicolor (in progress ).

Sven Oesau, Reconstruction of indoor scenes, Université de Nice-Sophia Antipolis, started April 2012, Pierre Alliez and Florent Lafarge (in progress ).

Manish Mandad, Robust Shape Approximation, Université de Nice-Sophia Antipolis, started November 2012, Pierre Alliez (in progress ).

Rémy Thomasse, Smoothed complexity of geometric structures and algorithms, started December 1st 2012, Olivier Devillers (in progress ).

### 8.2.2. Internships

*Internship proposals can be found on the web at <http://www.inria.fr/sophia/geometrical/>*

Manish Mandad, Shape approximation with guarantees, Master CBB (France).

Mathier Schmitt, Meshing of the hyperbolic octagon, L3 ENS Lyon (Monique Teillaud).

Claudia Werner, Triangulations on the sphere, Hochschule für Technik Stuttgart (Monique Teillaud)

## 8.3. Participation to conferences, seminars, invitations

### 8.3.1. Invited Talks

Frédéric Chazal, “Topological Data Analysis using distance based functions”, 4th International Workshop on computational Topology in Image context, Bertinoro, Italy, february 2012.

Olivier Devillers, “EuroCG-2012”, Delaunay triangulation, theory vs practice, March 19th.

Pierre Alliez, “Robust Shape Reconstruction”, Dive with an Expert Seminar, Schlumberger Montpellier Technology Center, May 2012.

J-D. Boissonnat, “Aspects algorithmiques de la triangulation des variétés”, Colloque Mathématiques et Formation des Ingénieurs”, Coetquidan, Juin 2012.

Frédéric Chazal, “Topological Data Analysis using distance based functions”, Dynamics, Topology and Computations (DyToComp 2012 - satellite conference of 6th European Congress of Mathematics), Bedlewo Poland, June 2012.

Frédéric Chazal, “Detection and Approximation of Linear Structures in Metric Spaces” Workshop on Algorithms for Modern Massive Data Sets (MMDS 2012), Stanford USA, July 2012.

J-D. Boissonnat, “Delaunay-type structures for manifolds”, Workshop on Applied and Computational Topology (ATMCS), Edinburgh July 2012.

Pierre Alliez, “Advances in Architectural Geometry”, Paris, September.

Pierre Alliez, “MICCAI workshop on Mesh Processing in Medical Image Analysis”, Nice, October.

Pierre Alliez, “3DIMPVT: 3D Imaging, Modeling, Processing, Visualization and Transmission”, Zurich, October.

J-D. Boissonnat, “Provably good meshes”, Dive with an Expert Seminar, Schlumberger Montpellier Technology Center, October 2012.

Frédéric Chazal, “Persistence Stability for Geometric complexes” , Workshop on Algebraic Topology and Machine Learning, NIPS 2012, Lake Tahoe USA, December 2012.

### 8.3.2. Seminars

Members of the project have presented their published articles at conferences. The reader can refer to the bibliography to obtain the corresponding list. We list below all other talks given in seminars, summer schools and other workshops.

Olivier Devillers, «Constructions incrémentielles randomisées», journées Présage, january 12-13.

Marc Glisse, «Complexité moyenne et Visibilité 3D», journées Présage, january 12-13.

Olivier Devillers, Olivier Devillers, «Delaunay triangulations, theory vs. practice», journées de géométrie algorithmique, april 2-6.

Clément Maria, “A Data Structure to Represent Simplicial Complexes“, journées de géométrie algorithmique, april 2-6.

Ross Hemsley, “Pivot Walk - A Faster Walking Strategy for Point Location” , journées de géométrie algorithmique, april 2-6.

Ramsay Dyer, “Stability of Delaunay-type structures for manifolds”, journées de géométrie algorithmique, april 2-6.

Frédéric Chazal, “Geometric Inference using distance-like functions”, Minisymposium on Computational Geometric Learning, Exploring geometric structures in high dimensions, CG:APT, SoCG 2012.

Frédéric Chazal, “Persistence Stability for Geometric complexes”, Workshop on Topological data analysis and machine learning theory, Banff Canada, October 2012.

Olivier Devillers, «Hypergraphes de régions vides I : point de vue de la géométrie algorithmique», journées Présage, october 18-19.

Marc Glisse, «Complexité moyenne en visibilité, sans les logs», journées Présage, october 18-19.

Frédéric Chazal, “Detection and Approximation of Linear Structures in Metric Spaces”, SMAI-SIGMA Conference 2012, CIRM Luminy France, November 2012.

Ramsay Dyer, “Stability of Delaunay-type structures for manifolds”, SMAI-SIGMA Conference 2012, CIRM

Clément Maria, “A space and time efficient implementation for computing persistent homology”, Computational Geometric Learning Workshop, Berlin, december 2012.

Pierre Alliez, “The CGAL Library and Mesh Generation”, Graduate school of the EUROGRAPHICS Symposium on Geometry Processing, July 2012.

### 8.3.3. *The Geometrica seminar*

<http://www.inria.fr/sophia/geometrica/>

The GEOMETRICA seminar featured presentations from the following visiting scientists:

Xianhai Meng (Beihang University, China): Mesh Generation and 3D Geological Modeling.

Thijs van Lankveld (University of Utrecht). Reconstructing urban geometry per surface from point samples. March 19.

Vincent Vidal (LIRIS, Lyon, France). Modèles graphiques pour segmenter et remailler les maillages surfaciques triangulaires. April 11.

Mark Blome (Konrad-Zuse-Zentrum für Informationstechnik, Berlin). Modeling of complex 3D nano-photonic devices using Computer Aided Design techniques. July 3.

Benjamin Burton (University of Queensland, Australia). Unknot recognition and the elusive polynomial time algorithm. October 3.

### 8.3.4. *Scientific visits*

Clément Maria visited Pr. Coutsias (University of New Mexico) for one week in september and Pr. Dey (Ohio State University) for one week.

Pierre Alliez, RWTH Aachen, October 10-12.

Olivier Devillers, EPI RAP, November 19-21.

Ross Hemsley, EPI RAP, November 19-21.

Florent Lafarge, University of Auckland, December 17- January 11.

## GRACE Team

## 8. Dissemination

### 8.1. Scientific Animation

- D. Augot is editor for the journal “RAIRO - Theoretical Informatics and Applications”
- D. Augot was editor of a special issue of Designs, Codes and Cryptography.
- D. Augot is co-organizer, with P. Loidreau, of the French CCA (Coding, Cryptography and Algorithms) seminar, <http://cca.saclay.inria.fr>, held in Paris three times per year.
- D. Augot was in the program committee of YACC 2012, Porquerolles.
- D. Augot was a reviewer for IEEE Transactions on Information Theory, Designs, Codes and Cryptography, SIAM Journal on Discrete Mathematics, Journal of Symbolic Computation, AAECC.
- B. Smith was a reviewer for ANTS, Eurocrypt, Asiacrypt, PQCrypto, RAIRO ITA, ETRI Journal.
- B. Smith contributes to the American Mathematical Society’s Mathematical Reviews (MathSciNet).
- A. Zeh was reviewer for Advances in Mathematics of Communications (AMC), IEEE Communications Letters and IEEE Transactions on Information Theory.

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

Master MPRI : Daniel Augot, Error correcting codes and applications to cryptography, 24, M2, U. Paris Diderot, ENS Ulm, ENS Cachan, Polytechnique, U. Paris Sud, U. P. et M. Curie, France.

Master MPRI : F. Morain, arithmetic algorithms for cryptology, 9h, M2, U. Paris Diderot, ENS Ulm, ENS Cachan, Polytechnique, U. Paris Sud, U. P. et M. Curie, France.

Master MPRI: B. Smith, arithmetic algorithms for cryptology, 12h, M2, U. Paris Diderot, ENS Ulm, ENS Cachan, Polytechnique, U. Paris Sud, U. P. et M. Curie, France

Master : F. Morain, 9 lectures of 1.5h, 3rd year course “cryptology” at École polytechnique (M1).

Master: B. Smith, 10 practical classes of 2h, 3rd year course “cryptology” at École polytechnique (M1).

Licence : F. Morain, 10 lectures of 1.5h, 1st year course “Introduction à l’informatique” (INF311) at École polytechnique (L2).

Licence: B. Smith, 20 TDs of 2h, 1st year course “Introduction à l’informatique” (INF311) at École polytechnique (L2).

Licence: A. Couvreur, 4 TP’s of 2h on Matlab Programming for 1st year students at École Polytechnique (L2).

#### 8.2.2. Supervision

PhD: Guillaume QUINTIN, “Sur l’algorithme de d’ecodage en liste de Guruswami–Sudan sur les anneaux finis”, École polytechnique, defended 2012/11/22.

PhD in progress : Cécile GONÇALVES, Advanced cardinality algorithms for cryptographically interesting curves, 01/10/2011, F. Morain and B. Smith

#### 8.2.3. Juries

- D. Augot was an examiner in the jury of Julia Pielant, “Tours de corps de fonctions algébriques et rang de tenseur de la multiplication dans les corps finis”, Université d’Aix-Marseille, December 12 2012.

- D. Augot was an examiner in the jury of Guillaume Quintin, “Sur l’algorithme de décodage en liste de Guruswami-Sudan sur les anneaux finis”, école Polytechnique, November 22 2012.
- D. Augot was an examiner in the jury of Anja Becker, “La technique de représentation – Application à des problèmes difficiles en cryptographie”, UVSQ, October 26 2012.
- D. Augot was an examiner in the jury of Amar Siad, “Protocoles de génération des clés pour le chiffrement basé sur de l’identité”, Université Paris 8, December 21 2012.
- F. Morain was president of the jury of Stéphane Jacob, Mars 08 2012 (Protection cryptographique des bases de données: conception et cryptanalyse).
- B. Smith was an examiner in the jury of Jean-Pierre Flori, “Fonctions booléennes, courbes algébriques et multiplication complexe”, Télécom ParisTech, February 3 2012.

### **8.3. Popularization**

- D. Augot made a presentation in the high school at Courcouronnes “Quand  $1 \oplus 1 = 0$ ”.
- D. Augot was interviewed by French novelist François Bon.
- F. Morain gave a talk on “Turing et la cryptanalyse”, during the special days for the centenary of the birth of Turing, Nancy 2012/09/20.

## GRAND-LARGE Project-Team

## 7. Dissemination

### 7.1. Scientific Animation

Christine Eisenbeis

- NPC 2012, the 9th Ifip International Conference on Network and Parallel Computing, Gwangju, Korea, September 6-8, 2012, program committee;
- UCNC 2012, 11th International Conference on Unconventional Computation and Natural Computation, Orléans, September 3-7, 2012, program committee;
- member of IFIP WG 10.3;
- IJPP (International Journal on Parallel Programming) editorial board.

Laura Grigori

- Member of Program Committee of IEEE International Parallel and Distributed Processing Symposium IPDPS 2012.
- Member of Program Committee of IEEE/ACM SuperComputing SC12 Conference, 2012.
- Member of the Best Paper Awards and Best Student Paper Award Jury, IEEE/ACM Supercomputing 2012, Conflict Chair for Algorithms, Supercomputing 2012.
- Member of Program Committee of HiPC 2012, 19th IEEE Int'l Conference on High Performance Computing.

### 7.2. Teaching - Supervision - Juries

#### 7.2.1. Teaching

Licence : Cédric Bastoul, Réseaux niveau licence, IUT d'Orsay (60h), Système niveau licence, IUT d'Orsay (40h).

Master : Christine Eisenbeis, coordinatrice du module "Optimisations et compilation" du M2 recherche NSI ("Nouveaux systèmes informatiques") de l'université Paris-Sud 11. 6 heures de cours.

Master: L. Grigori teaches in "Calcul Haute Performance" of M2 recherche NSI of University Paris Sud 11.

Polytech 5th year: L. Grigori teaches the "Parallel Computing" class.

#### 7.2.2. Supervision

HdR : Marc Baboulin, "Fast and reliable solutions for numerical linear algebra solvers in high-performance computing", université Paris-Sud 11, 5 décembre 2012.

HdR : Cédric Bastoul, "Contributions à l'optimisation des programmes de haut niveau", université Paris-Sud 11, 12 décembre 2012.

PhD: Simplicé Donfack, Solving Systems of Equations on Petascale Machines, University Paris Sud 11, 7 March 2012, PhD Supervisor: L. Grigori

PhD in progress: Amal Khabou, Dense matrix computations: communication cost and numerical stability, University Paris Sud 11, 11 February 2013, PhD Supervisor: L. Grigori

PhD in progress: Sophie Moufawad, Communication Avoiding preconditioners, University Paris Sud 11, Supervisor: L. Grigori

### 7.3. Popularization

Christine Eisenbeis a contribué au manuel scolaire d'enseignement de l'informatique en terminale S [39]. Elle est intervenue à la table ronde "Qu'en disent les femmes scientifiques" du colloque "Effets de genre dans les sciences et les technologies", organisé par le Centre Interdisciplinaire d'Étude de l'Évolution des Idées, des Sciences et des Techniques (CIEEIST, Centre d'Alembert) à Orsay les 9 et 10 mai 2012.

## 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.

## IN-SITU Project-Team

# 8. Dissemination

## 8.1. Scientific Animation

### 8.1.1. Keynote addresses and Invited Lectures

Michel Beaudouin-Lafon: “Instrumental Interaction in Multisurface Environments”, Adobe Research, San Francisco, USA, January 2012.

Michel Beaudouin-Lafon: “Instrumental Interaction in Multisurface Environments”, CMU Silicon Valley, San Jose, USA, February 2012.

Michel Beaudouin-Lafon: “BayScope: Multisurface Interaction With Large Displays ”, Inria Silicon Valley workshop, Berkeley, USA, February 2012.

Michel Beaudouin-Lafon & Wendy Mackay: “Co-adaptive Instruments and Multisurface Environments”, University of California, Irvine, USA, April 2012.

Michel Beaudouin-Lafon & Wendy Mackay: “Co-adaptive Instruments and Multisurface Environments”, University of California, San Diego, USA, April 2012.

Michel Beaudouin-Lafon: “Of Tools and Instruments”, Dagstuhl Seminar on Interaction Beyond the Desktop, August 2012.

Michel Beaudouin-Lafon: “Du Geste à l’Instrument”, FITG, Lille, November 2012.

Michel Beaudouin-Lafon: “DataSense - Interaction and Visualization”, Launch of Labex Digicosme, Ecole Polytechnique, Palaiseau, France, September 2012.

Wendy Mackay: “Medical Applications and Paper Substrates”, Workshop on Cognitive Aids, Berkeley, California, USA, May, 2012.

Wendy Mackay: “Asking Research Questions”, Seminar, Stanford University, March 2012.

Wendy Mackay: “Supporting multi-surface interaction in Medical Emergencies”, Inria Silicon Valley Workshop, Workshop on Cognitive Aids, Berkeley, California, USA, 2012.

Wendy Mackay: “Co-Adaptative Paper”, Dagstuhl Seminar on Interaction Beyond the Desktop, August 2012.

Wendy Mackay: “Creative Composition with Interactive Paper from creative expression to generative power”, Invited Seminar, Massachusetts Institute of Technology, Massachusetts, USA, October 2012.

Wendy Mackay: “Creative Composition with Interactive Paper from creative expression to generative power”, Invited Seminar, McGill University, Montreal Canada, October 2012.

Jérémie Garcia: “Interactive Paper for Musical Composition”, Seminar Les Nouveaux Espaces de la Notation Musicale – GRAME, Lyon, France, April 2012

Stéphane Huot: “Designing Advanced Interaction for High-Resolution Visualization Platforms”, 6th Seminar of Institut Farman – ENS Cachan, Cachan, France, November 2012

Emmanuel Pietriga: “Interfaces graphiques innovantes pour la visualisation de masses de données et le contrôle de systèmes complexes”, SIGCHI Local Chapter, Toulouse, France, June 2012

Cyprien Pindat: “JellyLens: Content-Aware Adaptive Lenses”, VISU 2012 seminar, Paris, France, September 2012

Theophanis Tsandilas: “Interpreting Strokes on Paper with a Mobile Assistant”, Forum sur l’interaction Tactile et Gestuelle, Tourcoing, France, November 2012

Theophanis Tsandilas: “Supporting Music Composition with Paper and Computers”, Inria Sophia Antipolis, France, November 2012

### **8.1.2. Journal editorial board**

Communications of the ACM (CACM), ACM: Wendy Mackay (Member of Editorial Board)

Transactions on Computer-Human Interaction (TOCHI), ACM: Michel Beaudouin-Lafon (Associate Editor)

International Journal of Human-Computer Studies (IJHCS), Elsevier: Michel Beaudouin-Lafon (Member of the Advisory Board)

International Journal on Semantic Web and Information Systems (IJSWIS): Emmanuel Pietriga (Editorial board, special issue on Visualisation of and Interaction with Semantic Web Data)

Journal of Computer-Supported Cooperative Work (JCSCW), Springer: Michel Beaudouin-Lafon (Member of the Advisory Board)

Journal of Visual Languages and Computing (JVLC), Elsevier: Emmanuel Pietriga (Guest Editor)

### **8.1.3. Journal reviewing**

Transactions on Computer-Human Interaction (TOCHI), ACM: Caroline Appert, Olivier Chapuis, Wendy Mackay, Emmanuel Pietriga

Transactions on Visualization and Computer Graphics (TVCG): Anastasia Bezerianos

International Journal of Human-Computer Studies (IJHCS), Elsevier: Caroline Appert, Anastasia Bezerianos

Human-Computer Interaction (HCI), Taylor & Francis: Michel Beaudouin-Lafon, Olivier Chapuis

Software: Practice and Experience, Wiley: Emmanuel Pietriga

### **8.1.4. Conference organization**

ACM CHI 2013 Program Committee Meeting - ACM Conference on Human Factors in Computing Systems: Wendy Mackay (General Chair), Michel Beaudouin-Lafon (Technical Program Committee Co-Chair)

ACM CHI 2012 - ACM Conference on Human Factors in Computing Systems: Caroline Appert (Program Committee member), Olivier Chapuis (Program Committee member), Emmanuel Pietriga (Program Committee member)

ACM ECRC 2012 - First ACM European Computer Research Congress: Michel Beaudouin-Lafon (Organizing Committee member)

ACM UIST 2012 - ACM Symposium on User Interface Software and Technology: Caroline Appert (Program Committee member)

ACM NordiCHI 2012 - Nordic forum for human-computer interaction research: Emmanuel Pietriga (Program Committee member)

IEEE VL/HCC 2012 - IEEE Symposium on Visual Languages and Human Centric Computing: Emmanuel Pietriga (Program Committee member)

IEEE Symposium on Visual Languages and Human Centric Computing: Emmanuel Pietriga (Steering Committee member, chair since September 2011)

IEEE PacificVis 2012 - Pacific Visualization Symposium: Anastasia Bezerianos (Program Committee member)

ACM WWW 2012 (Tutorials) - ACM World Wide Web: Emmanuel Pietriga (Program Committee member)

ACM CHI 2012 Panel “RepliCHI”: Wendy Mackay (Panelist and Co-Organizer)

SIGRAD 2012 - Eurographics Nordic forum for computer graphics and visualization

### **8.1.5. Conference reviewing**

ACM CHI 2012: Caroline Appert, Michel Beaudouin-Lafon, Anastasia Bezerianos, Olivier Chapuis, Jérémie Garcia, Stéphane Huot, Wendy Mackay, Mathieu Nancel, Emmanuel Pietriga, Daniel Spelmezan, Theophanis Tsandilas

ACM UIST 2012: Michel Beaudouin-Lafon, David Bonnet, Olivier Chapuis, Stéphane Huot, Wendy Mackay, Mathieu Nancel, Emmanuel Pietriga, Theophanis Tsandilas, Julie Wagner

ACM CSCW 2012 - ACM Conference on Computer Supported Cooperative Work: Emmanuel Pietriga

ACM EICS 2012 - ACM Symposium on Engineering Interactive Computing Systems: Emmanuel Pietriga

ACM MobileHCI 2012 - ACM Conference on Human Computer Interaction with Mobile Devices and Services: Olivier Chapuis, Stéphane Huot, Daniel Spelmezan

ACM NordiCHI 2012: David Bonnet, Olivier Chapuis, Can Liu, Mathieu Nancel

ACM DIS 2012 - ACM Conference on Designing Interactive Systems: Michel Beaudouin-Lafon, Mathieu Nancel

TEI 2012 - Conference on Tangible Embedded and Embodied Interaction: Caroline Appert

IUI 2012 - International Conference on Intelligent User Interfaces: Michel Beaudouin-Lafon, Stéphane Huot

IEEE InfoVis 2012 - IEEE Information Visualization Conference: Anastasia Bezerianos, Emmanuel Pietriga

IEEE PacificVis 2012 - IEEE Pacific Visualization Symposium: Anastasia Bezerianos, Mathieu Nancel

IEEE VAST 2012 - Visual Analytics Software and Technology: Anastasia Bezerianos, Emmanuel Pietriga

IEEE SciVis 2012 - Visual Analytics Software and Technology: Emmanuel Pietriga

Ergo'IHM 2012: Stéphane Huot

### **8.1.6. Scientific associations**

ACM: Michel Beaudouin-Lafon member of the ACM Europe Council (since 2009)

ACM SIGCHI Paris Local Chapter: Anastasia Bezerianos (Vice Chair), Julie Wagner (Seminars Co-Organizer, Webmaster)

AFIHM (French speaking HCI association): Michel Beaudouin-Lafon member of the Scientific Board (CPPMS), Stéphane Huot member of the Scientific Board (CPPMS) since 2012

ACM SIGCHI: Wendy Mackay, member of CHI Conference Management Committee (since 2011)

### **8.1.7. Evaluation committees and invited expertise**

European Research Council (ERC): Michel Beaudouin-Lafon (SYNERGY Grants panel member)  
Steering Committee for ANR CONTINT, National Research Agency, member: Michel Beaudouin-Lafon

ALLISTENE (Alliance des Sciences et Technologies du Numérique) working group on Knowledge, Content and Interaction, members: Wendy Mackay, Michel Beaudouin-Lafon

IRCAM (Paris) Scientific Committee, member: Michel Beaudouin-Lafon

TELECOM ParisTech Research Committee, member: Michel Beaudouin-Lafon

CIGREF Scientific Council, member: Michel Beaudouin-Lafon

Expert reviewer for NSERC (Canada): Michel Beaudouin-Lafon

Expert reviewer for ANR: Caroline Appert, Olivier Chapuis, Stéphane Huot, Emmanuel Pietriga, Wendy Mackay

Univ. Paris-Sud hiring committee, Commission Consultative des Spécialistes de l'Université 27ème section (computer science), members: Michel Beaudouin-Lafon, Stéphane Huot, Wendy Mackay

Univ. Paris-Sud hiring committee, Comité de Sélection 27ème section (computer science), members: Michel Beaudouin-Lafon

Univ. Paul Sabatier (Toulouse) hiring committee, Comité de Sélection 27ème section (computer science), members: Caroline Appert, Stéphane Huot

### **8.1.8. Awards**

Wendy Mackay: European Research Council Advanced Grant

## **8.2. Teaching - Supervision - Juries**

### **8.2.1. Teaching**

Master : Caroline Appert (Lecturer), "Evaluation of interactive systems", 50h, ICT Labs Masters in Computer Science - Human-Computer Interaction and Design Specialty (M1), Université Paris-Sud, France

Master : Caroline Appert, "Internships coordination", 5h, Research Masters in Computer Science - Interaction Specialty (M2), Université Paris-Sud, France

Master : Michel Beaudouin-Lafon, "General Master coordination", 10h, ICT Labs Masters in Computer Science - HCID Specialty (M1), Université Paris-Sud, France

Master : Michel Beaudouin-Lafon, "General Master coordination", 10h, Research Masters in Computer Science - Interaction Specialty (M2), Université Paris-Sud, France

Master : Michel Beaudouin-Lafon (Lecturer), "Fundamentals of Human-Computer Interaction", 25h, Research Masters in Computer Science - HCI Specialty (M2) & ICT Labs Masters in Computer Science - Human-Computer Interaction and Design specialty(M1), Université Paris-Sud, France

Master : Michel Beaudouin-Lafon (Lecturer), "Groupware and Collaborative Interaction", 20h, Research Masters in Computer Science - Interaction Specialty (M2), Université Paris-Sud, France

Master : Michel Beaudouin-Lafon (Lecturer), "Human-Computer Interaction project", 15h, ICT Labs Masters in Computer Science - Human-Computer Interaction and Design specialty (M1), Université Paris-Sud, France

Master : Anastasia Bezerianos (Lecturer), "General Master coordination", 10h, Masters in Computer Science - ICT Labs Masters in Computer Science - Human-Computer Interaction and Design specialty (M1), Université Paris-Sud, France

Master : Anastasia Bezerianos (Lecturer), "General Master coordination", 10h, Research Masters in Computer Science - Interaction Specialty (M2), Université Paris-Sud, France

Master : Anastasia Bezerianos (Lecturer), "Programming of Interactive Systems", 24h, ICT Labs Masters in Computer Science - Human-Computer Interaction and Design specialty (M1), Masters in Computer Science - M1 Classic & MIAGE, Université Paris-Sud, France

Master : Anastasia Bezerianos (Lecturer), "Mixed Reality and Tangible Interaction", 12h, Research Masters in Computer Science - Interaction Specialty (M2), Université Paris-Sud, France

Master : Anastasia Bezerianos (Lecturer), "Design and Evaluation of Interactive Systems", 24h, ICT Labs Masters in Computer Science - Human-Computer Interaction and Design specialty (M1), Université Paris-Sud, France

Licence : Anastasia Bezerianos (Lecturer), "Développement Logiciel", 10h, Licence Mention Informatique (L2), Université Paris-Sud, France

3eme année : Anastasia Bezerianos (Lecturer), “Interaction Homme-Machine”, Polytech Paris-Sud, France

Master : David Bonnet (Teaching Assistant), “Fundamentals of Human-Computer Interaction”, 25h, Research Masters in Computer Science - HCI Specialty (M2) & ICT Labs Masters in Computer Science - Human-Computer Interaction and Design specialty (M1), Université Paris-Sud, France

Licence : David Bonnet (Teaching Assistant), “Développement Logiciel”, 40h, Licence 2 Mention Informatique, Université Paris-Sud, France

Licence : Jérémie Garcia (Teaching Assistant), “Développement Logiciel”, 33h, Licence 2 Mention Informatique, Université Paris-Sud, France

Master : David Bonnet (Teaching Assistant), “Programming of Interactive Systems”, 26h, Masters in Computer Science - HCID Specialty (M1), M1 Classic, MIAGE, Université Paris-Sud, France

Licence : Jérémie Garcia (Teaching Assistant), “Vie Artificielle”, 32h, Licence 2 Mention Informatique, Université Paris-Sud, France

Undergraduate and Master: Wendy Mackay (Lecturer) “CS.377 Prototyping Interactive Systems”, 40h, Computer Science, Stanford University, USA.

Undergraduate and Master: Wendy Mackay (Lecturer) “CS.294h Design of Interactive Systems”, 40h, Computer Science, Stanford University, USA.

Master : Wendy Mackay (Lecturer) “Design and Evaluation of Interactive Systems” 24h, ICT Labs Masters in Computer Science - HCID Specialty (M1), Université Paris-Sud, France

Master : Wendy Mackay (Lecturer) “Design and Evaluation of Interactive Systems” 24h, Research Masters in Computer Science - HCID Specialty (M1), Université Paris-Sud, France

Master : Wendy Mackay (Lecturer) “Design and Evaluation of Interactive Systems” 24h, Professional Masters in Computer Science - HCID Specialty (M1), Université Paris-Sud, France

Master : Wendy Mackay (Lecturer) “Fondements de la Recherche” 24h, Research Masters in Computer Science - all three specialties (M2), Université Paris-Sud, France

Master : Mathieu Nancel (Teaching Assistant), “Programming of Interactive Systems”, 29h, Masters in Computer Science - M1 Classic & MIAGE, Université Paris-Sud, France

Licence : Mathieu Nancel (Teaching Assistant), “Certificat Informatique et Internet”, 3h (tutoring), Licence Mention Informatique (L1), Université Paris-Sud, France

3eme année : Mathieu Nancel (Teaching Assistant), “Bases de données”, 20h, Polytech Paris-Sud, France

3eme année : Mathieu Nancel (Teaching Assistant), “Interaction Homme-Machine”, 24h, Polytech Paris-Sud, France

Master : Theophanis Tsandilas (Guest Lecturer), “Introduction to Human-Computer Interaction”, 4.5h, DMKM Erasmus Mundus (M2), Polytech’Nantes, France

Master Thesis Supervision: Anastasia Bezerianos, Olivier Chapuis, “Navigating large information spaces on wall displays using mobile devices”, student: Stelios Frantzeskakis, Université Paris-Sud, France

Master Thesis Supervision: Theophanis Tsandilas, Anastasia Bezerianos, “Linking digital tabletops with physical paper for creative interactions”, student: Jérônimo Barbosa, Universidade Federal de Pernambuco (CIn/UFPE), Recife, Brazil

Master Thesis Supervision: Olivier Chapuis, Carolien Appert “Focus+Context Navigation and Interaction on Graphical Tablets”, student: Lei Chen, Telecom Brest, France

### **8.2.2. Supervision**

HDR: Emmanuel Pietriga, “Languages and Interaction Techniques for the Visualization and Manipulation of Massive Datasets”, Université Paris-Sud, June 8th, 2012.

Ph.D.: Mathieu Nancel, “Designing and Combining Interaction Techniques in Large Display Environments”, Université Paris-Sud, December 5th, 2012, Michel Beaudouin-Lafon and Emmanuel Pietriga.

Ph.D.: Julie Wagner, “A Body-centric Framework for Generating and Evaluating Novel Interaction Techniques”, Université Paris-Sud, December 6th, 2012, Wendy Mackay and Stéphane Huot.

Ph.D.: Émilien Ghomi, “Studying expert practices as a basis for designing expressive interaction techniques”, Université Paris-Sud, December 17th, 2012, Michel Beaudouin-Lafon and Stéphane Huot.

Ph.D.: Micheline Elias, “Semantic Information Retrieval and Visualization in Business Intelligence Dashboards”, École Centrale de Paris, October 14th, 2012, Anastasia Bezerianos and Marie-Aude Aufaure (École Centrale de Paris)

Ph.D. in progress: David Bonnet, “Gesture-based interactions and instrumental interaction”, started in September 2011, Michel Beaudouin-Lafon and Caroline Appert

Ph.D. in progress: Jérémie Garcia, “Supporting creative activities with interactive paper”, started in September 2010, Wendy Mackay and Theophanis Tsandilas

Ph.D. in progress: Cyprien Pindat, “Multi-dimensional exploration of complex multi-scale data”, started in September 2010, Claude Puech, Olivier Chapuis and Emmanuel Pietriga

Ph.D. in progress: Can Liu, “Collaborative Multiscale Navigation and Interaction”, started in September 2012, Michel Beaudouin-Lafon, Olivier Chapuis and Eric Lecolinet (Télécom Paris-Tech)

Ph.D. in progress: Daniel Strazzulla, “Multimedia Communication”, started in September 2012, Wendy Mackay

### 8.2.3. *Juries*

Sarah Alaoui (LIMSI, Univ. Paris-Sud, Orsay): Michel Beaudouin-Lafon (president), December 2012.

Jérôme Azé (LRI, Univ. Paris-Sud, Orsay - Habilitation): Michel Beaudouin-Lafon (president), November 2012.

Géry Casiez (LIFL, Univ. Lille 1, Lille - Habilitation): Michel Beaudouin-Lafon, (reviewer), November 2012.

Mathias Baglioni (Télécom ParisTech, Paris): Stéphane Huot (examiner), April 2012.

Aurélie Cohé (Univ. Bordeaux 1, Bordeaux): Caroline Appert (examiner), December 2012.

Micheline Elias (PhD, École Centrale de Paris, October 14th, 2012): Anastasia Bezerianos (advisor).

Mathieu Nancel (Ph.D., Université Paris-Sud, December 5th, 2012), Michel Beaudouin-Lafon (director) and Emmanuel Pietriga (advisor).

Emmanuel Pietriga (HDR, Université Paris-Sud, June 8th, 2012), Wendy Mackay (jury).

Julie Wagner (Ph.D., Université Paris-Sud, December 6th, 2012), Wendy Mackay (director) and Stéphane Huot (advisor).

Émilien Ghomi (Ph.D., Université Paris-Sud, December 17th, 2012), Michel Beaudouin-Lafon (director) and Stéphane Huot (advisor).

### 8.3. Popularization

- Wendy Mackay: “Les Dossiers de la Recherche, Entretien avec Wendy Mackay : Les tablettes seront de plus en plus interactives”, *La Recherche*, June 2012
- Michel Beaudouin-Lafon, Romain Primet: “La Plateforme WILD”, Presentation of WILD to High School students, November 2012.



- Michel Beaudouin-Lafon, Romain Primet: "WILD: An interactive platform for visualizing high-resolution data" Delegation from Chile (government and academia), November 2012.
- Wendy Mackay, Romain Primet: "WILD: une plateforme de visualisation interactive haute résolution" Presentation of WILD to HEC students, December 2012.
- Emmanuel Pietriga, Roman Primet: "La Plateforme WILD", Presentation of WILD to visitors from the French Ministry of Research and Inria's Administration Council, April 2012.
- Roman Primet: Presentation of WILD to industrial visitors of LRI, Visite des Industriels, Fête de la Science, October 2012.
- Theophanis Tsandilas, Julie Wagner, and Émilien Ghomi: Presentations for "Who is interaction design?", Centre Pompidou, Future en Seine, June 2012.

## MACS Project-Team

## 8. Dissemination

### 8.1. Scientific Animation

Dominique Chapelle

- Associate editor of international journals *Computers & Structures* and *M2AN*
- Guest editor-in-chief (with J.-F. Gerbeau) for *M2AN* special issue “Direct and inverse modeling of the cardiovascular and respiratory systems”
- Frequent reviewer for journals *Computer Methods in Applied Mechanics and Engineering*, *IJNME*
- Program committee of conference “Functional Imaging and Modeling of the Heart 2013”
- Invited lecturer at Mayneord-Phillips Summer School (Oxford, 2–6 July 2012)
- Invited seminars at ETH-Zürich 17/10, CMAP (Ecole Polytechnique) 13 Nov.

Philippe Moireau

- Reviewer this year for *M2AN* *BMMB* and *EJSOL* journals and the American Control Conference
- Project expert reviewer this year for the ANR and the Region Aquitaine
- Invited lecturer at Mayneord-Phillips Summer School (Oxford, 2–6 July 2012) on “Parameter calibration and identification for the cardiovascular system”
- Invited lecturer at Medisys Lab - Philips Research Seminar on “Joint state-parameter estimation for PDEs by observer and optimal filtering strategies”
- Speaker at “PICOOF 2012” Conference on “Improving Numerical Analysis Using Observers - the Second-Order Hyperbolic Case”

Alexandre Imperiale

- Speaker at “CANUM 2012” Conference on “Numerical convergence of semi-discrete time and space under-sampled observers for vibrating systems. Application to the wave equation”, May 2012
- Speaker at Medisys Lab - Philips Research Seminar on “Methodological framework for estimation in a cardiac model using tagged-MR images”, July 2012
- Speaker at Inria-Rocquencourt Junior Seminar on “Concepts of data assimilation in cardiac modeling”, April 2012

Annabelle Collin

- Poster at “CANUM 2012” Conference on “A surface-based electrophysiological model motivated by cardiac atria modeling and relying on asymptotic considerations”, May 2012
- Speaker at Junior Seminar Marne-La-Vallée on “A surface-based electrophysiology model relying on asymptotic analysis with physiological simulations”, November 2012

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

Philippe Moireau

Bachelor degree: “MA103 - Introduction aux EDP et à leur approximation numérique”, 14h, M1, ENSTA ParisTech, France

Master: “MA201 - La méthode des éléments finis”, 14h, M2, ENSTA ParisTech, France

Annabelle Collin

Bachelor degree: "Sequences, series, integration" , UPMC, spring 2012

Bachelor degree: "Linear algebra", UPMC, fall 2012

### 8.2.2. Supervision

PhD & HdR :

Master internship: Alexandre Routier, “Image-based observation operators for data assimilation in cardio-mechanics using currents”, INSA Rouen, june-october 2012, Advisors: A. Imperiale and P. Moireau

Master internship: Silvia Rosellini, “Towards a finite element mesh of a complete human heart”, Pisa University, june-october 2012, Advisor: A. Collin

PhD in progress: Annabelle Collin, “Dimensional reduction and electro-mechanical coupling for the modeling of electrophysiology and muscle contraction”, UPMC, started September 2011, advisors D. Chapelle and J.-F. Gerbeau

PhD in progress: Alexandre Imperiale, “Image-based observation operators for data assimilation in cardio-mechanics”, UPMC, started October 2010, advisors D. Chapelle and P. Moireau

PhD defended in May: Daniele Trimarchi, “Analysis of downwind sail structures using non-linear shells finite elements – Wrinkle development and fluid interaction effects”, University of Southampton, co-supervision D. Chapelle

### 8.2.3. Juries

Dominique Chapelle

- Thesis committee chairman: R. Sheshka, Ecole Polytechnique, 21 Sept.
- Thesis committee: D. Lopez, Ecole Polytechnique, 15 Oct.
- Thesis committee: C. Bertoglio, UPMC, 23 Nov.

### 8.3. Popularization

Dominique Chapelle

- Participation to an interview on “la Météo du Coeur” for new site inriality
- Speaker in “Débat citoyen” (Inria-Saclay, 19/11)
- Participation in “Rencontre Inria Industrie” on numerical simulation for medicine (Strasbourg, 21/11)

Philippe Moireau

- Participation to an interview on “la Météo du Coeur” for new site inriality

Annabelle Collin

- Best Poster Award at “CANUM 2012” Conference on “A surface-based electrophysiological model motivated by cardiac atria modeling and relying on asymptotic considerations”

## MAXPLUS Project-Team

## 9. Dissemination

### 9.1. Animation de la communauté scientifique/Scientific Animation

- M. Akian :
  - Membre élue du conseil du laboratoire du CMAP.
- S. Gaubert :
  - Vice-président du comité des projets du Centre de Recherche Inria de Saclay – Île-de-France depuis Janvier 2008, et membre nommé de la commission d'évaluation de l'Inria.
  - Membre du comité éditorial de la collection Mathématiques et Applications, SMAI et Springer.
  - Membre du comité éditorial du journal RAIRO Operations research.
  - Membre du conseil scientifique du CMAP.
  - Membre du CNU en 26ième section.
  - Membre du comité AERES ayant évalué le laboratoire M2N (Mathématiques, CNAM).
  - Coorganisateur de l'école d'été CEA-EDF-Inria d'Optimisation Stochastique, <http://www-hpc.cea.fr/SummerSchools2012-SO.htm>, 25 Juin - 6 Juillet, 2012, Cadarache.
  - Membre du comité de pilotage du PGMO (programme Gaspard Monge d'optimisation).

### 9.2. Enseignement - Encadrement - Jurys /Teaching - Supervision - Juries

#### 9.2.1. Enseignement/Teaching

- M. Akian
  - Master: “ Contrôle de chaînes de Markov : programmation dynamique et applications”, 18h=27h ETD, M2 Modélisation et Méthodes Mathématiques en Économie et Finance (MMMEF) de Paris 1, 1er semestre.
- X. Allamigeon
  - Master: Petites classes et encadrement d'enseignements d'approfondissement de Recherche Opérationnelle en troisième année à l'École Polytechnique (majeure de Mathématiques Appliquées) (niveau M1).
- O. Fercoq
  - Petites classes du cours d'optimisation quadratique de 1ere année de l'ENSTA (14h).
- S. Gaubert
  - Cours “Systèmes à Événements Discrets”, option MAREVA, ENSMP.
  - Cours “Algèbre max-plus pour le contrôle optimal et les jeux” du Parcours Optimisation et Théorie des Jeux - Modélisation en Économie (OJME) du M2 Mathématiques et Applications de l'Université de Paris 6.
  - Cours magistral, petites classes et organisation des enseignements d'approfondissement de Recherche Opérationnelle en troisième année à l'École Polytechnique (majeure de Mathématiques Appliquées), avec polycopié [42].
- Z. Qu
  - Petites classes d'Automatique, ENSTA.

### 9.2.2. Encadrement/Supervision

- PhD: Sylvie Detournay, "Multigrid methods for zero-sum two player stochastic games", École Polytechnique, soutenue le 25 septembre 2012, directeur de thèse: M. Akian.
- PhD: Olivier Fercoq, "Optimisation de vecteurs propres de Perron et applications : du référencement de pages web à la chronothérapie." École Polytechnique, soutenue le 17 septembre 2012, directeur de thèse: S. Gaubert, coencadrement: M. Akian et M. Bouhtou (Orange Labs).
- PhD in progress : Zheng Qu, inscrite à l'École Polytechnique, depuis septembre 2010, directeur de thèse: S. Gaubert, coencadrement: S. Tang (Université Fudan, Shanghai, Chine).
- PhD in progress : Jean-Baptiste Dumont, inscrit à l'École Polytechnique depuis novembre 2010, directeur de thèse: S. Gaubert, coencadrement: M. Bouhtou (Orange Labs).
- PhD in progress : Pascal Benchimol, inscrit à l'École Polytechnique à partir de septembre 2011, directeur de thèse: S. Gaubert, coencadrement: X. Allamigeon, avec une participation à l'encadrement de M. Joswig (TU-Darmstadt) dans le cadre du programme bourse Monge (bourses données pour des doctorants avec un partenaire étranger).
- PhD in progress : Victor Magron, inscrit à l'École Polytechnique, depuis septembre 2010, directeur de thèse: Benjamin Werner (Inria et LIX), coencadrement: S. Gaubert et X. Allamigeon.
- PhD in progress : Andrea Marchesini, inscrit à l'École Polytechnique, depuis septembre 2012, directeur de thèse: Marianne Akian, codirection: S. Gaubert, avec une participation à l'encadrement de Françoise Tisseur (U. Manchester).

### 9.2.3. Jurys/Juries

- M. Akian
  - Jury de thèse de O. Fercoq (17 septembre 2012).
  - Jury de thèse de S. Detournay (25 septembre 2012).
- X. Allamigeon
  - Membre du jury du prix de thèse Gilles Kahn de la Société Informatique de France (septembre-décembre 2012).
- S. Gaubert
  - Membre de la commission de recrutement en informatique à l'École Polytechnique.
  - Membre du jury de concours Inria DR2.
  - Membre d'une commission de recrutement MdC à Paris 6 (Mathématiques / Optimisation).
  - Jury de thèse de O. Fercoq (École Polytechnique, 17 septembre 2012).
  - Jury de thèse de S. Detournay (École Polytechnique, 25 septembre 2012).
  - Jury de thèse de E Bukina (Nice - Sophia Antipolis, 19 juillet 2012, rapporteur);
  - Jury de thèse de H. Amini (École des Mines, 27 septembre 2012, rapporteur)
  - Jury d'HDR de L. Gramont (Université de Saint-Étienne, 9 mars 2012)

## 9.3. Popularization

- J.P. Quadrat :
  - Administre le site d'intérêt général <http://www.maxplus.org>, dédié à l'algèbre max-plus.
- X. Allamigeon
  - Exposé de vulgarisation dans le cadre des "Unithé ou Café" à Inria Saclay, mars 2012. Titre: "Pas d'erreurs fatales avec le tropical".

## 9.4. Participation à des colloques, séminaires/Conférences, Seminars

- M. Akian
  - Hilbert Geometries Workshop, CIRM, Luminy, 9 au 12 janvier 2012 (organisé par B. Lemmens et C. vernicos). Titre de l'exposé: "Fixed points and eigenvectors of convex monotone dynamical systems".
  - 2012 SIAM Conference on Applied Linear Algebra, June 18th-22nd, Valencia, Spain. "Minisymposium on max-algebra". Titre de l'exposé: "Tropical bounds for the eigenvalues of structured matrices".
  - MTNS 2012 (20th International Symposium on Mathematical Theory of Networks and Systems), University of Melbourne, 9-13 juillet 2012. Session invitée "Optimisation-based controller design". Titre de l'exposé: "Nonlinear spectral radii of order-preserving maps and infinite horizon zero-sum two-player stochastic games".
  - Workshop "Tropical and idempotent Mathematics", organisé par G. Litvinov, Moscou, 26-31 août 2012. Titre de l'exposé: "Fixed points of discrete convex monotone dynamical systems".
  - Séminaire du CMAP, 11 décembre 2012. Titre de l'exposé: "Aspects tropicaux du contrôle optimal ergodique".
- X. Allamigeon
  - Séminaire 68NQRT, IRISA/Inria Rennes, 16 février 2012. Titre de l'exposé: "Computing disjunctions using tropical polyhedra".
  - Séminaire du CMAP, 12 juin 2012. Titre de l'exposé: "Polyèdres tropicaux: théorie et applications".
  - 2012 SIAM Conference on Applied Linear Algebra, June 18th-22nd, Valencia, Spain. "Minisymposium on max-algebra". Titre de l'exposé: "Minimal representations of tropical polyhedra by half-spaces".
- P. Benchimol
  - Groupe de Travail des Thésards du Laboratoire Jacques-Louis Lions, Paris 6, 31 janvier 2012.
- O. Fercoq
  - Séminaire du "Research group on Large Graphs and Networks" à l'Université Catholique de Louvain, 10 février. Titre de l'exposé: "Convergence of Tomlin's HOTS algorithm and optimization of web ranking".
  - 2012 SIAM Conference on Applied Linear Algebra, June 18th-22nd, Valencia, Spain. Titre de l'exposé: "Optimization of the HOTS score of a website's pages".
  - 3rd International Conference on Engineering Optimization, July 1-5, Rio de Janeiro. Titre de l'exposé: "Synchronisation and control of proliferation in cycling cell population models with age structure".
  - 21st International Symposium on Mathematical Programming, August 19-24, Berlin. Titre de l'exposé: "Polyhedral and ergodic control approaches to PageRank optimization and spam detection".
  - 6th International conference on NETWORK Games, CONTROL and OPTimization (Netgcoop), November 28-30, Avignon. Titre de l'exposé: "PageRank optimization applied to spam detection".
- S. Gaubert
  - Hilbert Geometries Workshop, CIRM, Luminy, 9 au 12 janvier 2012 (organisé par B. Lemmens et C. vernicos). Titre de l'exposé: "Nonexpansive maps, zero-sum games and tropical convexity".

- Future Directions in Tropical Mathematics & its Applications, CICADA / LMS workshop, School of Mathematics, University of Manchester. Titre de l'exposé: Lectures on tropical convexity (3 hours). "Nonexpansive maps, zero-sum games and tropical convexity".
- Séminaire à l'Université de Saint-Étienne, 8 mars 2012. Titre de l'exposé: "Tropical eigenvalues"
- 21st International Symposium on Mathematical Programming, August 19-24, Berlin. Titre de l'exposé: "Policy iteration algorithm for zero-sum stochastic games with mean payoff".
- POSTA'12, Hamilton institute, Maynooth, Ireland, Sep. 3-4 2012, Titre de l'exposé: "The contraction rate in Thompson metric of order-preserving flows on a cone"
- Z. Qu
  - 9<sup>e</sup>me journée Optimeo, 26 mars 2012, École Polytechnique. Titre de l'exposé: "Curse of dimensionality reduction in max-plus based approximation methods: theoretical estimates and improved pruning algorithms."
- C. Walsh
  - Hilbert Geometries Workshop, CIRM, Luminy, 9 au 12 janvier 2012 (organisé par B. Lemmens et C. Vernicos). Titre de l'exposé: "Horofunctions and isometries of Hilbert geometries".
  - Workshop "Tropical mathematics and its applications", University of Birmingham, 28 June 2012 (organisé par Peter Butkovic). Titre de l'exposé: "The horofunction boundary".
  - Workshop "Tropical and idempotent mathematics", organisé par G. Litvinov, Moscou, 26-31 août 2012. Titre de l'exposé: "Studying isometry groups using the horofunction boundary".
  - Workshop "Lipschitz metric on Teichmüller space", AIM, Palo Alto, California, 22 au 26 octobre 2012 (organisé par F. Kassel, A. Papadopoulos, K. Rafi, et J. Tao). Titre de l'exposé: "The horofunction boundary of Thurston's metric".

## MEXICO Project-Team

# 8. Dissemination

## 8.1. Scientific Animation

### 8.1.1. *Benedikt Bollig*

was the organizer and a PC member of the 4rd Young Researchers Workshop on Concurrency Theory (YR-CONCUR), which was co-located with CONCUR'12. He was a PC member of the International Workshop on Interactions, Games and Protocols (IWIGP'12). Moreover, he served as a reviewer for numerous international conferences and journals. He also was a member of the *commission scientifique* Inria Saclay.

### 8.1.2. *Thomas Chatain*

was a member of the program committee of ACSD'12 (*International Conference on Application of Concurrency to System Design*). He was a member of a selection committee at CNAM Paris in 2012, and participated in the organization and presentation of the one-day Petri net tutorial on unfoldings at the *international conference on the application and theory of Petri nets* in Hamburg, June 2012.

### 8.1.3. *Paul Gastin*

is co-head (with Madhavan Mukund) of the new International Associated Laboratory (LIA) INFORMEL (INdo-French FORMal Methods Lab). This LIA was created in January 2012 by an agreement between CNRS, ENS Cachan, University Bordeaux 1 on the french side and the Chennai Mathematical Institute, the Institute of Mathematical Sciences of Chennai, and the Indian Institute of Science of Bangalore on the Indian side.

He is the head of the computer science department of ENS Cachan.

Paul Gastin is an associate editor of the Journal of Automata, Languages and Combinatorics.

He is on the Advisory Board of the EATCS-Springer book series

- Monographs in Theoretical Computer Science,
- Texts in Theoretical Computer Science.

He was a member of the program committees of LATA 2012 (Language and Automata Theory and Applications) and CONCUR 2012 (International Conference on Concurrency Theory).

He was an invited speaker at the 17th International Conference on Implementation and Application of Automata (CIAA'12).

He was a member of 3 selection committees (Cachan, Nancy and Orléans).

### 8.1.4. *Stefan Haar*

is an associate editor for the journal *Discrete Event Dynamic Systems: Theory and Application*, and was on the program committees of *SAFEPROCESS 2012* and *PNSE 2012*. He participated in the organization and presentation of the one-day Petri net tutorial on unfoldings at the *international conference on the application and theory of Petri nets* in Hamburg, June 2012 Stefan is the correspondent for Inria's *DRI* (international relations service) for the Saclay center, and ipso facto member of the GTRI (working group on international relations) of Inria's COST.



### 8.1.5. Serge Haddad

has been a member of the steering committee of the *International Conference on Application and Theory of Petri Nets (ICATPN)* since 2001. He gave a tutorial on timed and stochastic Petri nets, and was co-president of the program committee of ICATPN 2012; he was also co-president for the tutorials at the 18th Int. Symp. on Formal Methods (FM) 2012, Paris, France, and member of the program committee of the Workshop on Research and Use of Multiformalism Modeling Methods of QEST, September 2012, London, UK. He is a founding member of the research group *MeFoSyLoMa* and co-chair of the software project *COSYVERIF*. He was one of the evaluators in the Evaluation AERES of the *Cedric* Laboratory, and is a member of the selection committees of the universities Paris VI and Nancy.

### 8.1.6. Stefan Schwoon

was a member of the program committee of GRAPHITE'12 (First Workshop on GRAPH Inspection and Traversal Engineering). and of the MOVEP 2012 winter school. He gave a tutorial on unfolding and partial-order techniques at CEA LIST in January.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Here we present the teaching activities of PhD students and *researchers*; note that in addition to the classes here, four team members (Th. Chatain, P. Gastin, S. Haddad and S. Schwoon) are full-time professors of ENS Cachan and fulfill their teaching obligations there.

Master : Sandie Balaguer, Programmation en C, 32, M1, U.F.R d'Informatique de Paris 7, France

Master : Benjamin Monmege, Probabilistic Aspects of Computer Science, 10h, M1, ENS de Cachan, France

Master : Benoît Barbot, Projet de programmation réseau, 30h, M1, ENS Cachan, France

Master : Benedikt Bollig, Modeling and verification of real-time distributed systems, 12, M2, MPRI, France

Ecole d'Ingénieur: Hernán Ponce de León, Algorithmique et Programmation, 32, 3e année (équivalent L3), Ecole Centrale Paris, France

Master : Stefan Haar, Verification (VSFR), 12, M2, UPMC, France

Master : Stefan Haar, Modelisation et optimisation (MOPS), 12, M2, Université d'Evry, France

Agrégation : Stefan Haar, Algorithmique , 42.5, Agrégation option informatique, ENS Cachan

Master : César Rodríguez, Projet de programmation réseau, 30h, M1, ENS Cachan, France

Agrégation : César Rodríguez, TP programmation, 24h, Préparation à l'agrégation, ENS Cachan, France

Licence : Aiswarya CYRIAC, Algorithmique avancée, 60, niveau L3, ENS de Cachan, France

Licence: Benoît Barbot , Mathématiques Discrètes, 22.5 , L3 , ENS Cachan, France

Licence : Benjamin Monmege, Machine learning, 60h, L3, ENS de Cachan, France

### 8.2.2. Supervision

PhD & HdR :

*PhD*: Sandie Balaguer, Concurrency in Real-Time Distributed Systems, ENS Cachan, December 13, 2012, supervised by Stefan Haar and Thomas Chatain.

*PhD*: Hilal Djafri, Numerical and Statistical Approaches for Model Checking of Stochastic Processes, ENS Cachan, June 19, 2012, supervised by Serge Haddad.

PhD in progress: Hernán Ponce de León, Testing of concurrent systems using event structures, ENS Cachan, supervised by Stefan Haar and Delphine Longuet (Paris XI)

PhD in progress: César Rodríguez, *Contextual Petri Nets and Applications*, begun in September 2010, supervised by Stefan Schwoon

PhD in progress: Aiswarya Cyriac, *Temporal logics for concurrent recursive programs*, begun in September 2010, supervised by Benedikt Bollig and Paul Gastin.

PhD in progress: Benjamin Monmege, *Specification and verification of qualitative properties and applications to queries for XML documents*, begun in September 2010, supervised by Benedikt Bollig and Paul Gastin.

PhD in progress: Benoît Barbot, *Rare event handling in statistical model checking*, begun in September 2011, Serge Haddad and Claudine Picaronny (ENS Cachan).

### 8.2.3. *Juries*

#### 8.2.3.1. *Thomas Chatain*

participated, as examiner and co-supervisor, in the PhD committee of Sandie Balaguer ([43], December 13, 2012).

#### 8.2.3.2. *Paul Gastin*

was president of the committee for the HDR of Daniele Varacca at *Université Paris Diderot*.

#### 8.2.3.3. *Stefan Haar*

was president of the Ph D committees of Hilal Djafri [44] at ENS Cachan (June 19, 2012) and Hoang-Thach Nguyen at Paris VII (April 18, 2012), and member (as the thesis supervisor) of the PhD committee of Sandie Balaguer ([43], December 13, 2012). He will be a reviewer for the thesis of Elisabeta Mangioni at University of Milan-Bicocca in Italy.

#### 8.2.3.4. *Serge Haddad*

was examiner and thesis supervisor in the Ph D committee of Hilal Djafri [44] at ENS Cachan (June 19, 2012). He also was a reviewer for the thesis of H. Schonenberg at Eindhoven University, mai 2012, and member of the PhD Committees of L. Jezequel (University of Rennes, november 2012, and M. Lauer at INP Toulouse, june 2012).

#### 8.2.3.5. *Stefan Schwoon*

participated in the *jury de mi-parcours* of Ala Eddine Ben Salem, PhD student at LIP6.

## OAK Team

# 9. Dissemination

## 9.1. Scientific Animation

### 9.1.1. Participation in Editorial Boards

M. Herschel is the guest editor of the special issue on Data Integration of the journal *it-Information Technology*, Volume 54, Issue 3, 2012.

I. Manolescu is the editor in chief of the *ACM SIGMOD Record*, an associate editor of the *ACM Transactions on Internet Technologies*, and a member of the “Experiments and Analysis” track of *PVLDB*.

### 9.1.2. Participation in Conference Organization

Members of the project have been chairs of scientific events:

Ioana Manolescu

- Bases de Données Avancées (BDA) 2012
- IEEE International Conference on Data Engineering (ICDE) 2012, “Semistructured Data, XML and RDF” track
- Extending Database Technologies (EDBT) 2012 conference, Tutorial track
- Co-chair of the VLDB 2012 PhD workshop

Members of the project have participated in program committees:

Nicole Bidoit

- Bases de données Avancées (BDA) 2012

Dario Colazzo

- IEEE International Conference on Data Engineering (ICDE) 2012

François Goasdoué

- Bases de Données Avancées (BDA) 2012
- IEEE International Conference on Tools with Artificial Intelligence (ICTAI) 2012

Melanie Herschel

- IEEE International Conference on Data Engineering (ICDE) 2012
- Conference on Very Large Databases (VLDB) 2012
- VLDB PhD Workshop 2012
- Bases de Données Avancées (BDA) 2012

Ioana Manolescu

- ACM SIGMOD Conference 2012
- IEEE International Conference on Data Engineering (ICDE), “Cloud, Data Warehousing, and Large Data” track
- Data Analytics in the Cloud Workshop, in collaboration with EDBT/ICDT 2012
- Non-conventional Data Access Workshop, in collaboration with the ER conference 2012
- Cloud Intelligence Workshop, in collaboration with VLDB 2012

Members of the project participate in steering committees:

Nicole Bidoit

- Ecole thématique Masse de données Distribuées, Aussois, 27 mai - 1er juin 2012

Ioana Manolescu

- Workshop on Open Data (WOD) 2012

### 9.1.3. Invited Presentations

Ioana Manolescu gave a keynote presentation titled “Triples with a purpose” at the Semantic Search Workshop (SSW) next to the VLDB Conference 2012.

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

- Licence, Nicole Bidoit, Bases de données, 25.5h éq. TD, L3, Université Paris-Sud, France
- Master, Nicole Bidoit, SGBD relationnels: implémentation, 18 éq. TD, M2, Université Paris-Sud, France
- Master, Nicole Bidoit, Bases de données et Systèmes d’Information, 27 éq. TD, M2, Université Paris-Sud, France
- Master, Nicole Bidoit, Mise à Niveau en Informatique - Bases de Données, 40 éq. TD, M1, Université Paris-Sud, France
- Master, Nicole Bidoit, Base de données Avancées, 30 éq. TD, M1, Université Paris-Sud, France
- Master, Nicole Bidoit, Données et connaissances pour le WEB, 32 éq. TD, M2, Université Paris-Sud, France
- Master : Dario Colazzo, SGBD relationnels: tuning d’applications , 21h éq. TD, M2, Université Paris-Sud, France
- Master : Dario Colazzo, Bases de données , 21h éq. TD, M2, Université Paris-Sud, France
- Master : Dario Colazzo, Systèmes de Gestion de Bases de Données, 54h éq. TD, Polytech, Université Paris-Sud, France
- Master : Dario Colazzo, Base de Données, 21h éq. TD, Polytech, Université Paris-Sud, France
- Master : Dario Colazzo, Base de Données Avancées, 31h éq. TD, Polytech, Université Paris-Sud, France
- Master : Dario Colazzo, Mise à niveau bases de données, 17h éq. TD, M1, Université Paris-Sud, France
- Master : Dario Colazzo, Gestion des données sur Internet, 18h éq. TD, M1, Université Paris-Sud, France
- Master : Dario Colazzo, Base de Données , 20h éq. TD, Polytech, Université Paris-Sud, France
- Master : Dario Colazzo, Tutorat d’apprentis, 20h eq. TD, Polytech, Université Paris-Sud, France
- Licence : François Goasdoué, Bases de données, 62,5h éq. TD, L3, Université Paris-Sud, France
- Master : François Goasdoué, Web Sémantique, 74h éq. TD, M2, Université Paris-Sud, France
- Master : François Goasdoué, Données et connaissances pour le Web, 7,5h éq. TD, M2, Université Paris-Sud, France
- Master : François Goasdoué, Modèles de raisonnement distribué, 4,5h éq. TD, M2, Université Paris-Sud, France
- Master : François Goasdoué, Décision et raisonnement, 9h éq. TD, M2, Université Paris-Dauphine, France
- Master : François Goasdoué, Ontologies et Web Sémantique, 13,5h éq. TD, M2, Université Paris-Dauphine, France
- Master: Melanie Herschel, Entrepôts de données et requêtes OLAP, 99.5h éq. TD, M2, Université Paris-Sud, France

Master: Melanie Herschel, Intégration de données et Web sémantique, 4,5h éq. TD, M2, Université Paris-Sud, France

Master : Ioana Manolescu, Données Sémi-Structurées et XML, 18h éq. TD M2, Université Paris-Sud, France

Master : Ioana Manolescu, Services Web, 27 éq. TD, M2, Université Paris-Dauphine, France

### 9.2.2. Supervision

PhD & HdR :

HdR : François Goasdoué, Knowledge Representation meets DataBases for the sake of ontology-based data management [1], Univ. Paris-Sud, 11/07/2012

PhD : Mohamed-Amine Baazizi, Satic Analysis for the Optimization of Temporal XML document Updates, Univ. Paris-Sud, 07/09/2012, Nicole Bidoit et Dario Colazzo

PhD : Noor Malla, Partitioning XML data, towards distributed and parallel management, Univ. Paris-sud, 21/09/2012, Nicole Bidoit et Dario Colazzo

PhD : Federico Ulliana, Types for Detecting XML Query-Update Independence, Univ. Paris-Sud, 12/12/2012, Nicole Bidoit et Dario Colazzo

PhD : Konstantinos Karanasos, View-Based Techniques for the Efficient Management of Web Data [2], Univ. Paris-Sud, 29/06/2012, François Goasdoué and Ioana Manolescu

PhD in progress : Asterios Katsifodimos, Efficient Distributed Views for XML Data Management, Univ. Paris-Sud, 29/06/2012, Ioana Manolescu

PhD in progress : Julien Leblay, Efficient management of annotated documents, 01/10/2010, François Goasdoué and Ioana Manolescu

PhD in progress : Alexandra Roatis, Traitement efficace de requêtes SPARQL avec extensions OLAP pour entrepôts RDF, 01/09/2011, Dario Colazzo, François Goasdoué and Ioana Manolescu

PhD in progress: Aikaterini Tzompanaki, Foundations and Algorithms to Compute the Provenance of Missing Data, 1/11/2012, Melanie Herschel and Nicole Bidoit

PhD in progress : Stamatis Zampetakis, Scalable algorithms for cloud-based semantic web data management, 15/10/2012, François Goasdoué and Ioana Manolescu

### 9.2.3. Juries

- Nicole Bidoit, PhD defense committee of François Hantry, “Problèmes basés sur les Causes dans le cadre de la Logique Temporelle Linéaire : Théorie et Applications”, Univ. Lyon 1, 17/09/2012.
- Dario Colazzo, PhD defense committee of Bogdan Butnaru, “Optimizations of XQuery in peer-to-peer distributed XML databases”, Univ. Versailles, 12/04/2012.
- François Goasdoué, PhD defense committee of Jitao Yang, “Un modèle de données pour bibliothèques numériques”, Univ. Paris-Sud, 30/05/2012.
- Ioana Manolescu, PhD defense committee of Silviu Maniu, “Data Management in Social Networks”, Telecom ParisTech, 28/09/2012.
- Ioana Manolescu, PhD defense committee of Jordi Creus, “ROSES : Un moteur de requêtes continues pour l’agrégation de flux RSS à large échelle”, UPMC - Sorbonne Universités, 7/12/2012.
- Ioana Manolescu, HDR defense committee of Cédric du Mouza, “Indexing Very Large Datasets”, Université Paris-Dauphine, 30/11/2012.

## 9.3. Popularization

Ioana Manolescu presented the issues involved in cloud-based management of Web data, to a panel on the technology aspects of Big Data, at the “Big Data” industrial conference at Paris on March 20, 2012.

## PARIETAL Project-Team

## 8. Dissemination

### 8.1. Scientific Animation

- B. Thirion acts as reviewers for Medical Image Analysis, IEEE Transactions on Medical Imaging, NeuroImage, ISBI, IPMI, as associate editor for Frontiers in Neuroscience Methods, as program committee for the MICCAI 2012 conference and as expert for ANR, NWO.
- B.Thirion set up the following workshop at the OHBM 2012 conference: *Why believe in Multivariate Pattern Analysis ? The skeptical Neuroimager's view*. G. Varoquaux was part of it. B.Thirion organized a session entitled *Comprendre le cerveau par le signal et l'image* at the Digiteo forum.
- B. Thirion gave an invited presentation at the ISBI 2012, CompImage 2012, the FENS 2012 workshop on brain activity decoding, MICCAI 2012 workshop on functional connectivity and at the MLINI 2012 workshop, at the *Institut de biologie du Collège de France*, Paris and at the *Institute of Psychiatry*, London.
- G. Varoquaux gave a tutorial on the use of Python in Machine learning at the PRNI 2012 conference.
- G. Varoquaux was program committee of Euroscopy 2012, PyHPC 2012 and ESCO 2012.
- G. Varoquaux acts as reviewer for NeuroImage, HBM, MedIA, TMI, Frontiers in NeuroInformatics et Frontiers in Brain Imaging methods, Review editor for Frontiers in NeuroInformatics and Frontiers in Brain Imaging methods and as expert for ANR and Agoranov.
- Alexandre Gramfort is Program committee PRNI, Associate editor IEEE EMBC conference and Associate editor Frontiers in brain imaging methods.
- Alexandre Gramfort acts as reviewer for Neuroimage, IEEE TMI, brain topography, HBM journal, PLOS ONE, brain connectivity, journal of clinical neurophysiology, MICCAI, physics in medicine and biology
- Alexandre Gramfort took part to the *Inria-Clinattec* days at Grenoble.

### 8.2. Teaching - Supervision - Juries

#### 8.2.1. Teaching

Master: MVA, Bertrand Thirion + Alexandre Gramfort, Imagerie fonctionnelle cérébrale et interface cerveau machine, 12h + 3h, M2, ENS Cachan, France.

Master biostatistiques: Bertrand Thirion, cours de biostatistique computationnelle, 6h, M2, Paris XI, France.

PhD: Gaël Varoquaux taught Python (8h at Inria Saclay, 8h at Inria Grenoble, 4h at Espresso summer school).

Master: master Telecom ParisTech UE ACIMED, Alexandre Gramfort taught MEG + fMRI 4h30, M2, Telecom ParisTech, Paris, France

#### 8.2.2. Juries

Bertrand Thirion was part of the PhD committee of

- Peter Rasmussen, DTU, Denmark on April 11th. The PhD thesis was entitled *Mathematical modeling and visualization of functional neuroimages*.
- Archana Venkataraman, MIOT/CSAIL, USA on June 26th. The PhD thesis was entitled *Generative Models of Brain Connectivity for Population Studies*.
- Mikael Naveau, Cyceron, Caen, France on November 5th. The PhD thesis was entitled *Connectivité fonctionnelle cérébrale pendant l'état de repos: modélisation multi-échelle*.

### **8.3. Popularization**

Alexandre Gramfort was shot in the *E=M6* TV program, in which Marc lesguy took part to the so-called word decoding experiment.

Parietal animated the Inria stand at Fête de la science days, Moulon Saclay, during 3 days (October 12-14), where we presented a nice game designed by Virgile Fritsch to illustrate our research activities.

## PARSIFAL Project-Team

## 8. Dissemination

### 8.1. Scientific Animation

#### 8.1.1. Organization

Dale Miller served as Program Committee Chair for the following three meetings: CPP 2012: Second International Conference on Certified Programs and Proofs, 13-15 December, Kyoto, Japan; IJCAR 2012: International Joint Conference on Automated Reasoning, Manchester, UK, June; FICS 2012: Fixed Points in Computer Science (a satellite workshop of ETAPS 2012), Tallinn, Estonia, 24 March.

Dale Miller served on the Program Committees of the following three meetings: LFMTTP'12: Workshop on Logical Frameworks and Meta-Languages: Theory and Practice, 9 September, Copenhagen, Denmark; LAM 2012: Fifth International Workshop on Logics, Agents, and Mobility, June, Hamburg, Germany; LPAR-18: The 18th International Conference on Logic for Programming, Artificial Intelligence and Reasoning, Merida, Venezuela, 11-15 March.

Dale Miller organized the Special Session on Structural Proof Theory and Computing at the 2012 Annual Meeting of the Association of Symbolic Logic (ASL), Madison, Wisconsin, 31 March - 3 April.

Kaustuv Chaudhuri and Stefan Hetzl organized the [Collegium Logicum 2012 workshop](#) at Inria Saclay during 15–16 November

Kaustuv Chaudhuri and Brigitte Pientka organized the [RAPT/PROMIS workshop](#) in Montreal, Canada, during 14–18 October

#### 8.1.2. Invited Talks

Dale Miller gave an invited talk at the Journées nationales du GDR-IM, 25-26 January 2012, University of Paris 7.

Dale Miller gave an invited talk at the ANR-DFG Hypothese Workshop titled Different Aspects of Proof Theory, ENS Paris, 3 May 2012.

Dale Miller gave research talks at the following venues: Summer Workshop on Proof Theory, Pisa, Italy, 12-15 June; CHocCoLa seminar, ENS Lyon, 15 March; Workshop on Certificates and Computation, ITU Copenhagen, 12 March; Department of Mathematics, Carnegie Mellon University, 5 April.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence : Stéphane Graham-Lengrand teaches 50 hours (eq. TD) in L3 at Ecole Polytechnique in the course “INF431: Algorithmique et programmation”.

Master : Dale Miller taught 12 hours at MPRI (Master Parisien de Recherche en Informatique) in the Course 2-1: Logique linéaire et paradigmes logiques du calcul.

Master : Stéphane Graham-Lengrand teaches 36 hours (eq. TD) in M1 at Ecole Polytechnique in the course “INF551: Computer-aided reasoning”, and 15 hours (eq. TD) in M2 at Master Parisien de Recherche en Informatique (MPRI) on “Curry-howard correspondence for classical logic”.

### 8.2.2. Supervision

PhD in progress :



1. Zakaria Chihani, since October 2012, supervisor: Dale Miller
2. Mahfuza Farooque, since October 2010, co-supervisor: Stéphane Graham-Lengrand
3. Ivan Gazeau, since October 2009, co-supervisor: Dale Miller
4. Nicolas Guenot, since October 2008, supervisor: Lutz Straßburger
5. Hernán-Pablo Vanzetto, since October 2010, co-supervisor: Kaustuv Chaudhuri

### **8.2.3. *Juries***

Dale Miller served as a reporter for the habilitation of Stefan Hetzl (Fall 2012) and was the president of the jury for the habilitation of Frédéric Blanqui, 13 July 2012.

Dale Miller served as a member of the PhD jury for Robert Simmons, Carnegie Mellon University, 22 October 2012. He was also “rapporteur” for the PhD of Nicolas Pouillard, University of Paris 7, 13 January 2012.

## POEMS Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

- A. S. Bonnet-Ben Dhia is the Head of the Electromagnetism Group at CERFACS (Toulouse)
- A. S. Bonnet-Ben Dhia is in charge of the relations between l'ENSTA and the Master "Dynamique des Structures et des Systèmes Couplés (Responsable : Etienne Balmes)".
- A. S. Bonnet-Ben Dhia is presidente of the "Conseil scientifique de l'Institut des sciences de l'ingénierie et des systèmes (INSIS-CNRS)".
- M. Bonnet is associate editor of European Journal of Mechanics A/Solids (since Jan. 2008).
- M. Bonnet is associate editor of Engineering Analyses with Boundary Elements (since July 2011).
- M. Bonnet is on the editorial board of *Inverse Problems*.
- M. Bonnet is on the editorial board of *Computational Mechanics*.
- P. Ciarlet is an editor of DEA (Differential Equations and Applications) since July 2008
- P. Ciarlet is an editor of CAMWA (Computers & Mathematics with Applications), since January 2012
- G. Cohen is a scientific expert of ONERA.
- P. Joly is a member of the scientific committee of CEA-DAM.
- P. Joly is a member of the Scientific Committee of the Seminar in Applied Mathematics of College de France (P. L. Lions).
- P. Joly is an editor of the journal Mathematical Modeling and Numerical Analysis.
- P. Joly is a member of the Book Series Scientific Computing of Springer Verlag.
- M. Lenoir is a member of the Commission de Spécialistes of CNAM.
- M. Lenoir is in charge of Master of Modelling and Simulation at INSTN.
- E. Lunéville is the Head of UMA (Unité de Mathématiques Appliquées) at ENSTA.
- The Project organizes the monthly Seminar Poems (Coordinators: A. Burel, N. Chaulet, S. Chaillat, S. Marmorat)

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

- Eliane Bécache
  - *Compléments sur la méthode des éléments finis*, ENSTA (2nd year).
  - *Cours sur les PML*, Collège Polytechnique, Paris.
- Anne-Sophie Bonnet-Ben Dhia
  - *Outils élémentaires d'analyse pour les EDP*, ENSTA (1st year).
  - *Propagation dans les guides d'ondes*, ENSTA (3rd year).
  - *Théorie spectrale des opérateurs autoadjoints et applications aux guides optiques*, ENSTA (2nd year).
  - *Propagation des ondes*, Ecole Centrale de Paris (M2).
- Marc Bonnet
  - *Outils élémentaires d'analyse pour les EDP*, ENSTA (1st year).

- *Problèmes inverses*, Master TACS (ENS Cachan) et DSMSC (Centrale Paris).
- *Méthodes intégrales*, Master TACS (ENS Cachan).
- *Equations intégrales et multipôles rapides*, Ecole doctorale MODES (Univ. Paris Est, Marne la Vallée).
- Laurent Bourgeois
  - *Outils élémentaires pour l'analyse des EDP*, ENSTA (1st year).
  - *Fonctions de la variable complexe*, ENSTA (2nd year)
- Aliénor Burel
  - *Probabilités*, IUT d'informatique, Université Paris-Sud XI, Orsay (2nd year).
  - *Analyse*, IUT d'informatique, Université Paris-Sud XI, Orsay (1st year).
- Maxence Cassier
  - *Système dynamique: Stabilité et Commande*, ENSTA (1st year).
  - *Introduction à MATLAB*, ENSTA (1st year).
  - *Fonction de variable complexe*, ENSTA (2nd year)
  - *Tutorat pour élèves en difficulté en mathématiques appliquées*, ENSTA (1st year).
- Stéphanie Chaillat
  - *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA (1st year).
  - *Fonctions de variable complexe*, ENSTA (2nd year)
- Mathieu Chamaillard
  - *Introduction aux équations aux dérivées partielles hyperboliques et à leur discrétisation*, ENSTA (1st year)
  - *Introduction au Calcul Scientifique*, ENSTA (2nd year)
  - *Tutorat pour élèves en difficulté en mathématiques appliquées*, ENSTA (1st year).
- Nicolas Chaulet
  - *Equations différentielles et introduction à l'automatique*, ENSTA (1st year)
  - *Méthode des éléments finis*, ENSTA (2nd year)
- Patrick Ciarlet
  - *Méthode des éléments finis*, ENSTA, Paris (2nd year)
  - *Compléments sur la méthode des éléments finis*, ENSTA, Paris (2nd year)
  - *Parallélisme et calcul réparti*, ENSTA (3rd year), and Master "Modeling and Simulation" (M2)
  - *Les équations de Maxwell et leur discrétisation*, ENSTA, Paris (3rd year), and Master "Modeling and Simulation" (M2)
- Sonia Fliss
  - *Méthode des éléments finis*, ENSTA, Paris (2nd year)
  - *Programmation scientifique et simulation numérique*, ENSTA, Paris (2nd year)
  - *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA, Paris (1st year).
- Christophe Hazard
  - *Outils élémentaires d'analyse pour les EDP*, ENSTA, Paris (1st year)
  - *Théorie spectrale des opérateurs autoadjoints et applications aux guides optiques*, ENSTA, Paris (2nd year).
- Patrick Joly

- *Introduction à la discrétisation des équations aux dérivées partielles*, ENSTA, Paris (1st year).
- *Outils élémentaires d'analyse pour les EDP*, ENSTA, Paris (1st year).
- Marc Lenoir
  - *Fonctions de variable complexe*, ENSTA, Paris (2nd year).
  - *Equations intégrales*, ENSTA, Paris (3rd year).
- Eric Lunéville
  - *Introduction au calcul scientifique*, ENSTA, Paris (2nd year)
  - *Programmation scientifique et simulation numérique*, ENSTA, Paris (2nd year)
  - *Propagation dans les guides d'ondes*, ENSTA, Paris (2nd year)
- Simon Marmorat
  - *Introduction aux équations aux dérivées partielles hyperboliques et à leur discrétisation*, ENSTA, Paris (1st year)
  - *La méthode des éléments finis*, ENSTA, Paris (2nd year)
- Jean-François Mercier
  - *Outils élémentaires d'analyse pour les EDP*, ENSTA, Paris (1st year).
  - *Fonctions de variable complexe*, ENSTA, Paris (2nd year).
  - *Théorie spectrale des opérateurs autoadjoints et application aux guides optiques*, ENSTA, Paris (2nd year).
- Nicolas Salles
  - *Analyse et séries de Fourier*, Université Paris XI Orsay (L2)
  - *Systèmes Linéaires (Matlab)*, Université Paris XI Orsay (L3)
  - *Calcul scientifique*, Université Paris XI Orsay (L3)

### 9.2.2. Supervision

HdR : Laurent Bourgeois, "Sur quelques problèmes inverses gouvernés par des équations aux dérivées partielles elliptiques", Université Pierre et Marie Curie, Paris 6, 3 Février 2012

PhD : Juliette Chabassier, "Modeling and numerical simulation of a grand piano", Ecole Polytechnique, 12 Mars 2012, Patrick Joly

PhD : , Nicolas Chaulet, "Modèles d'impédance généralisée en diffraction inverse", Ecole Polytechnique, 27 Novembre 2012, Laurent Bourgeois

PhD : , Lucas Chesnel, "Étude de quelques problèmes de transmission avec changement de signe. Application aux métamatériaux", Ecole Polytechnique, 12 Octobre 2012, Anne-Sophie Bonnet-Ben Dhia, et Patrick Ciarlet

PhD : Sébastien Imperiale, "Modélisation mathématique et numérique de capteurs piézoélectriques", Université Paris IX, 19 Janvier 2012, Gary Cohen et Patrick Joly

PhD in progress : Alienor Burel, "Methodes numériques pour les ondes élastiques en présence d'interfaces minces et de milieux mous", Octobre 2010, Patrick Joly

PhD in progress : Maxence Cassier, "Methodes de retournemet temporel en régime transitoire", Octobre 2010, Christophe Hazard et Patrick Joly

PhD in progress : Matthieu Chamaillard, "Conditions aux limites effectives pour des revêtements minces périodiques", Octobre 2011, Patrick Joly

PhD in progress : Simon Marmorat, "Etude d'un modèle asymptotique et de son couplage avec une approche par éléments finis pour simuler la propagation d'ondes ultrasonores dans un milieu complexe perturbé par de petites inclusions", Mars 2012, Patrick Joly

PhD in progress : Nicolas Salles, "Stabilisation du calcul des singularités dans les méthodes d'équations intégrales variationnelles", Octobre 2009, Marc Lenoir

PhD in progress : Antoine Tonnoir, "Simulation numérique de la diffraction d'ondes ultrasonores par un défaut localisé dans une plaque élastique anisotrope", Octobre 2011, Anne-Sophie Bonnet-Ben Dhia et Sonia Fliss

PhD in progress : Audrey Vigneron, "Formulations intégrales pour la simulation du contrôle non destructif par courants de Foucault", Novembre 2011, Marc Bonnet

PhD in progress : Rémi Cornaggia, "Asymptotique petit-défaut de fonctions-coût et son application en identification: justifications théorique et expérimentale, extensions", Octobre 2012, Marc Bonnet

PhD in progress : Geoffrey Beck, "Modélisation de la propagation d'ondes électromagnétiques dans des câbles co-axiaux", Octobre 2012, Patrick Joly

PhD in progress : Elizaveta Vasilevskaia, "Modes localisés dans les guides d'onde quantiques", Novembre 2012, Patrick Joly

PhD in progress : Camille Carvalho, "Guides d'onde plasmonique", Octobre 2012, Anne-Sophie Bonnet-Ben Dhia, et Patrick Ciarlet

PhD in progress : Valentin Vinales, "Etude de quelques problèmes mathématiques de la théorie des métamatériaux", Octobre 2012, Sonia Fliss et Patrick Joly

PhD in progress : Mathieu Lecouvez, "Méthodes de décomposition de domaine optimisées pour la propagation d'ondes en régime harmonique", Mars 2012, Patrick Joly

### 9.3. Popularization

- Marc Bonnet
  - *Topological derivative of energy cost functionals - application to flaw identification*, ECCOMAS Conference, Vienne, Austria, September.
  - *An error in constitutive equation approach for transient inverse elastodynamics (with W. Aquino)*, 8th European Solid Mechanics Conference, Graz, Austria, July.
  - *Flaw identification using elastodynamic data and small-defect asymptotics of cost functionals*, 1st Russian-French conference on mathematical geophysics, mathematical modeling in continuum mechanics and inverse problems, Biarritz, June.
- Laurent Bourgeois
  - *Sur une "approche extérieure" pour résoudre le problème inverse de l'obstacle*, Journée "Problèmes inverses", CNAM, June 21th.
  - *An "exterior approach" to solve the inverse obstacle problem for the Stokes system*, Control of Fluid-Structure Systems and Inverse problems, Toulouse, July 25-28th
- Aliénor Burel
  - *Using potentials in elastodynamics : a challenge for FEM*, First Franch-Russian Workshop Conference on Mathematical Geophysics, Continuous Mechanical Modelisation and Inverse Problems, Biarritz, June 18-22th.
  - *Elastic Wave Propagation in Soft Elastic Materials With Thin Layers*, Inria Junior Seminar, Rocquencourt, June 26th.
- Maxence Cassier
  - *Recent Advances in Modeling, Analysis and Simulation of Wave Propagation* Metz March 29 - March 31st.
  - *Wave propagation in complex media and applications*, Heraklion, Crete, May 7-11th.
- Stéphanie Chaillat

- *A New Fast Multipole Method for 3D Elastodynamics based using the Half-Space Fundamental Solutions*. EUROMECH Colloquium 540: Advanced Modelling of Wave Propagation in Solids, Prague, Czech Republic, October 2012.
- *Fast multipole accelerated boundary integral equation method for 3-D elastodynamic problems in a half-space*, Séminaire du LaMSID, EDF R&D Clamart, France, September 2012.
- *A New Fast Multipole Method for Elasticity based on the Half-Space Fundamental Solutions*, ECCOMAS 2012, Vienna, Austria, September 2012.
- *Formulation and Fast Evaluation of the Multipole Expansions of the Elastic Half-Space Fundamental Solutions*, ESMC 2012, Graz, Austria, July 2012.
- *A new fast multipole formulation for the elastodynamic half-space fundamental solutions*, 4th Workshop BEM on the Saar, Saarbrücken, Germany, May 2012.
- Nicolas Chaulet
  - *Reconstruction of a perfectly conducting obstacle coated with a thin dielectric layer*, PICOFF 12, Palaiseau (France), June 4-6th.
  - *A factorization method for support characterization of an obstacle with a generalized impedance boundary condition*, IPMS conference, Antalya (Turkey), May 21-26th.
- Lucas Chesnel
  - *Transmission eigenvalue problems with sign-changing coefficients*, Picof conference, Palaiseau, April.
  - *Time harmonic Maxwell equations with sign changing coefficients*, Around scattering by obstacles and billiards, Aveiro, Portugal, March.
- Sonia Fliss
  - *Wave propagation in locally perturbed periodic infinite media*, Forschungseminar "Amthematische Modelle der Photonik", Berlin, January.
  - *Dirichlet-to-Neumann operators in periodic waveguide : application to the application of trapped modes*. Days on diffraction 2012, May.
  - *A DtN approach for the exact computation of guided modes in a photonic crystal waveguides*, Seminar of CERMICS, Marne La Vallée, June.
  - *On the relevance of effective models of metamaterials near the boundary*, GDR Ultrasons, Paris, December.
- Patrick Joly
  - *Mathematical modelling of non homogeneous coaxial cables for time domain simulation*, Journées Guides d'Ondes, Marseille, 27-28 January 2012
  - *Mathematical modelling of non homogeneous coaxial cables for time domain simulation*, Workshop MOPNET (EPSRC Matrix and Operator Pencil Network), Bath University, England, April 2012
  - *Numerical simulation of a grand piano*, Wave propagation in complex media and applications, Archimedes Center for Modeling, Analysis and Computation (ACMAC), University of Crete, Heraklion, Mai 2012
  - *Asymptotic modelling of electromagnetic wave propagation in co-axial cables*, Workshop on Numerical Solution of Evolution Problems, Heraklion, Crete, Septembre 2012
  - *Mathematical modeling of non-homogeneous lossy co-axial cables for time domain simulation*, Inria Bcam workshop, Biarritz October 2012
- Jean-François Mercier
  - *Time-harmonic acoustic scattering in a complex flow*, Anne-Sophie Bonnet-BenDhia, Jean-François Mercier, Florence Millot, Sébastien Pernet et E. Peynaud, Acoustics 2012, Nantes, avril 2012
  - *Propagation of guided waves through weak penetrable scatterers*, A. Maurel et J.-F. Mercier, Seventh Meeting of the GDR "Wave Propagation in complex media for quantitative and non destructive evaluation", Oléron, May 2012

## POPIX Exploratory Action

### 9. Dissemination

#### 9.1. Scientific Animation

##### Editorial Activity.

Marc Lavielle reviewed articles for the journals *Computational Statistics and Data analysis*, *Biometrics*, *Statistics in Medicine*, *Journal of Pharmacokinetics and Pharmacodynamics*.

Kevin Bleakley reviewed articles for the journals *Human Genetics* and *Analytica Chimica Acta*.

Maud Delattre reviewed articles for the journal *Journal of Statistical Computation and Simulation*.

##### Conference Participation.

Marc Lavielle presented his work in the following conferences and workshops:

- CLAPEM, Viña del Mar, Chile, March 2012.
- Analysis of longitudinal data in oncology, Grenoble, June 2012.
- Population Approach Group in Europe, Venice, Italy, June 2012.
- Word Conference on Pharmacometrics, Seoul, Korea, September 2012.
- Analyse de données longitudinales de Cancer, Toulouse, October 2012.

Kevin Bleakley presented his work at:

- Spring Research Conference, Cambridge, USA, June 2012.

Maud Delattre presented her work at:

- GDR Stat et Santé, Rennes, September 2012.

#### 9.2. Teaching - Supervision - Juries

##### 9.2.1. Teaching

Masters: Marie-Anne Poursat, Coordinator of the Mathematical Engineering course, Paris-Sud University

Masters: Marc Lavielle, Computational Biostatistiques, 12 hours, Paris-Sud University

PhD/Postdoc: Marc Lavielle, Population approach and Mixed effects models, 12 hours, University at Buffalo, USA

Miscellaneous: Marc Lavielle, Population approach and Mixed effects models, 12 hours, PAGE meeting 2012, Italy

Miscellaneous: Marc Lavielle, Population approach and Mixed effects models, 12 hours, WCOP meeting 2012, Korea

##### 9.2.2. Supervision

- PhD: Maud Delattre, *Inférence statistique dans les modèles mixtes à dynamique Markovienne*, 4 July 2012 at Paris-Sud University, Marc Lavielle.
- PhD: Cyprien Mbogning, *Inference dans les modèles conjoints et de melange non-linéaires à effets mixtes*, 17 December 2012 at Paris-Sud University, Marc Lavielle.
- PhD in progress: Célia Barthelemy, *Modèles à effets mixtes pour l'assimilation de données en oncologie*, debut: October 2012, Marc Lavielle.
- Other: Kevin Bleakley supervised two student projects in statistical learning in the *Marketing et gestion de la relation client* year 3 class at ENSAI, Rennes.

#### 9.3. Popularization

Marc Lavielle gave a tutorial called *Santé: quelles méthodes d'analyse des risques?* for the *Association des journalistes Scientifiques de la Presse d'Information* (AJSPI) on November 27, 2012, Paris: <http://www.ajspi.com/activites/invitations/sante-queelles-methodes-danalyse-des-risques>

Kevin Bleakley gave a talk entitled *United Stats of Obama* at Inria Saclay, describing the use of statistical and machine learning methods in the 2012 USA presidential campaign.



## REGULARITY Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

Jacques Lévy Véhel is associate editor of the journal *Fractals*.

Jacques Lévy Véhel was invited for two weeks at the program *Stochastic Analysis* organized by the Bernoulli Center, Lausanne.

### 9.2. Teaching - Supervision - Juries

#### 9.2.1. Teaching

- Erick Herbin is head of the Mathematics Department at Ecole Centrale Paris since 2011.
- Erick Herbin is in charge of the “Mathematical Modeling and Numerical Simulation” Program in the Applied Mathematics option of Ecole Centrale Paris.
- Erick Herbin is in charge of the Probability course at Ecole Centrale Paris (20h).
- Erick Herbin is in charge of the Advanced Probability course at Ecole Centrale Paris (30h).
- Erick Herbin and Jacques Lévy Véhel are in charge of the Brownian Motion and Stochastic Calculus course at Ecole Centrale Paris (30h).
- Erick Herbin gives tutorials on Real Analysis and Integration at Ecole Centrale Paris (10h).
- Jacques Lévy Véhel teaches a course on Wavelets and Fractals at Ecole Centrale Nantes (8h).
- Paul Balança and Alexandre Richard are teaching assistants since October 2010 at Ecole Centrale Paris:
  - Paul Balança gives tutorials on Probability, Real Analysis and Integration at Ecole Centrale Paris (20h).
  - Alexandre Richard gives tutorials on Probability and Statistics at Ecole Centrale Paris (20h).
  - Paul Balança and Alexandre Richard give tutorials on Advanced Probability at Ecole Centrale Paris (17h).
- Paul Balança, Erick Herbin and Alexandre Richard supervise several student’s research projects in the field of Mathematics at Ecole Centrale Paris.

#### 9.2.2. Supervision

PhD : Joachim Lebovits, Stochastic Calculus With Respect to Multifractional Brownian Motion and Applications to Finance, Université de Paris 6, defended on January 25, 2012, supervised by J. Lévy Véhel and M. Yor.

PhD in progress : Benjamin Arras, Self-similar processes in higher order chaoses, started in September 2011, supervised by J. Lévy Véhel.

PhD in progress : Paul Balança, Stochastic 2-microlocal analysis of SDEs, started in October 2010, supervised by Erick Herbin.

PhD in progress : Alexandre Richard, Regularity of set-indexed processes and construction of a set-indexed process with varying local regularity , started in October 2010, supervised by Erick Herbin and E. Merzbach.

### 9.3. Popularization

J. Lévy Véhel has written articles for Interstices and the "le saviez-vous" page of Inria web site.

## SECSI Project-Team

# 8. Dissemination

## 8.1. Scientific Animation

Administrative charges:

- Hubert Comon-Lundh is director of the Parisian Master of Research in Computer Science (MPRI).
- Hubert Comon-Lundh is member of the “comité de pilotage”, labex Digicosme.
- Hubert Comon-Lundh is member of the “commission formation”, labex Digicosme.
- Hubert Comon-Lundh is member of the “Jury prix de these Gilles Kahn/SIF”.
- Stéphanie Delaune is a member of the scientific committee of Inria Saclay since February 2012.
- Stéphanie Delaune is “Déléguée aux thèses” at the École Doctorale Sciences Pratiques at ENS Cachan since September 2012.
- Jean Goubault-Larrecq, in charge of computer science questions, common Ecole Polytechnique-ENS Paris, Lyon, Cachan-ESPCI entrance competitive exam, starting September 2012.

Editorial boards:

- Hubert Comon-Lundh is associate editor of the ACM Transactions on Computational Logic.
- Hubert Comon-Lundh is guest editor of the Journal of Automated Reasoning (special issue, security and rewriting, Feb 2012).

Participation to program committees of conferences:

- 16th International Conference on Foundations of Software Science and Computation Structures FoSSaCS'13, Rome, Italy, March 2013 (Jean Goubault-Larrecq).
- 27th Annual ACM/IEEE Symposium Logic in Computer Science, Dubrovnik, Croatia, 2012 (Hubert Comon-Lundh)
- 8th International Conference on Information Security Practice and Experience ISPEC'12, Hangzhou, China (Stéphanie Delaune).
- 24th *Journées Francophones des Langages Applicatifs* JFLA'13, Aussois, France, February 2013 (David Baelde).

Selection committees:

- Hubert Comon-Lundh was president of selection committee, MCF, ENS Cachan 2012.
- Hubert Comon-Lundh was president of the selection committee for the mixed chair CNRS-Aix Marseille University, 2012.

Evaluation committees:

- Hubert Comon-Lundh, member of the jury of “Prime d’Excellence Scientifique” (National committee, professors and maîtres de conférences), 2012.
- Jean Goubault-Larrecq, AERES evaluation, LIAFA, Université Paris Diderot, December 27-28, 2012
- Jean Goubault-Larrecq, CNRS PEPS program evaluation committee, March 22, 2012

Scientific boards:

- Hubert Comon-Lundh, CNRS INSII, Oct. 2010-Oct 2014
- Jean Goubault-Larrecq, external member of the selection committee of the Formal Methods and Security Inria-DGA seminar, Rennes

Invited talks:

- Hubert Comon-Lundh *Towards unconditional soundness*. Grenoble, Jan 13, 2012, Workshop on Computer-Aided Security.
- Jean Goubault-Larrecq, *Probability and Nondeterminism in Domain Theory, Part II*, Logic and Interactions, week 4: Quantitative approaches, Marseilles, France, February 20-24.

Invitation to seminars:

- Stéphanie Delaune, Dagstuhl seminar on Analysis of security APIs, Wadern, Germany, November 25-28.
- Stéphanie Delaune, *Analysing privacy-type properties using formal methods*, CAPPRIS meeting, Paris, March 14
- Jean Goubault-Larrecq, *An Isomorphism between Powercone and Prevision Models*, McGill seminar, Bellairs Institute, Holetown, Barbados, April 01-06.

## 8.2. Teaching - Supervision - Juries

### 8.2.1. Teaching

Licence :

- Rémy Chrétien, *Initiation à l'informatique* (TP), 39h., L1, Université Paris 7, Paris, France
- Hubert Comon-Lundh *Logic and Computability*, 42h., L3, ENS Cachan, France
- Jean Goubault-Larrecq, *Programming*, 42h., L3, ENS Cachan, France
- Jean Goubault-Larrecq, *Logic and Computer Science* (a.k.a., the lambda-calculus), 36h., L3, ENS Cachan and ENS Paris, France
- Jean Goubault-Larrecq, Internship reviews, 4h., L3, ENS Cachan, France
- David Baelde, *Logic and Computability*, 45h., L3, ENS Cachan, France
- David Baelde, Internship reviews, 3h., L3, ENS Cachan, France

Master :

- Jean Goubault-Larrecq, *Cryptography, Cryptographic Protocols and Quantum Cryptography*, Part 1/3, 4h., M1, Séminaire Regards Croisés Mathématiques-Physique, ENS Cachan, France
- Stéphanie Delaune, *Cryptography, Cryptographic Protocols and Quantum Cryptography*, Part 2/3, 4h., M1, Séminaire Regards Croisés Mathématiques-Physique, ENS Cachan, France
- Jean Goubault-Larrecq, *Advanced Complexity*, 42h., M1, MPRI course 1-17, France
- Jean Goubault-Larrecq, Internship reviews, 4h., M1, ENS Cachan, France
- Hubert Comon-Lundh, Internship reviews, 32h, M2 MPRI
- Jean Goubault-Larrecq, Internship reviews, 16h., M2, MPRI, France
- Hubert Comon-Lundh *Computational Soundness*, 12h., M2, MPRI course 2-30, France, Jan-Feb 2012
- Hubert Comon-Lundh *Formal proofs of security*, 24h, M2, MPRI course 2-30, France Oct-Dec 2012 (48h)
- Hubert Comon-Lundh *Preparation option info agreg: logique*, 24h, préparation à l'agrégation de Mathématiques, Jan-May 2012, ENS Cachan, France
- Hubert Comon-Lundh, rehearsal of Computer Science Lessons, préparation à l'agrégation de Mathématiques, 18h., ENS Cachan, France

- Jean Goubault-Larrecq, rehearsal of Computer Science Lessons, préparation à l'agrégation de Mathématiques, 18h., ENS Cachan, France

### 8.2.2. Supervision

PhD :

- Vincent Cheval, *Automatic verification of cryptographic protocols: privacy-type properties*, ENS Cachan, Dec. 03, 2012 [12], supervised by Stéphanie Delaune and Hubert Comon-Lundh
- Hedi Benzina, *Enforcing virtualized systems security*, ENS Cachan, Dec. 17, 2012 [11], supervised by Jean Goubault-Larrecq

PhD in progress :

- Rémy Chrétien, *Trace equivalence for an unbounded number of sessions*, Started Oct. 2012, supervised by Stéphanie Delaune
- Robert Künnemann, *Secure APIs and Simulation-Based Security*, Started Oct. 2010, supervised by Steve Kremer and Graham Steel; Graham and Robert are now at EPI Prosecco
- 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.
- Guillaume Scerri, *Preuves abstraites de protocoles cryptographiques concrets*, Started Oct. 2011, supervised by Hubert Comon-Lundh

Masters:

- Rémy Chrétien, *Trace equivalence of protocols for an unbounded number of sessions*, 2012, advisors Stéphanie Delaune and Véronique Cortier
- Apoorva Deshpande, *Automated verification of equivalence properties modulo AC*, 2012, advisors Stéphanie Delaune and Steve Kremer

### 8.2.3. Juries

- PhD:
  - Hubert Comon-Lundh, president of the jury: Jeremy Planul, *Typage, compilation, et cryptographie pour la programmation répartie sécurisée*, Ecole Polytechnique, Feb 08, 2012.
  - Hubert Comon-Lundh, member of the jury: Vincent Cheval, *Preuves automatiques d'indistinguabilité*, ENS Cachan, Dec 03, 2012.
  - Jean Goubault-Larrecq, member of the jury: Gabriel Kerneis, *Continuation-Passing C: Program Transformations for Compiling Concurrency in an Imperative Language*, Université Paris Diderot, November 09, 2012.
  - Jean Goubault-Larrecq, member of the jury: Hedi Benzina, *Enforcing virtualized systems security*, ENS Cachan, December 17, 2012
- HdR:
  - Hubert Comon-Lundh, reviewer of the habilitation and member of the jury: Karthikeyan Bhargavan, *Towards the Automated Verification of Cryptographic Protocol Implementations*, Ecole Normale Supérieure, May 04, 2012.
  - Hubert Comon-Lundh, reviewer of the habilitation and member of the jury: Pascal Lafourcade *Cryptographic Primitives, Voting protocols, and Wireless Sensor Networks*, Université Joseph Fourier, Grenoble, Nov. 06, 2012.
  - Hubert Comon-Lundh, president of the jury: Jérôme Leroux, *Machines à compteur et arithmétique de Presburger*, Université Bordeaux I, Bordeaux, Dec 06, 2012.

- Jean Goubault-Larrecq, member of the jury: Laurent Doyen, *Games and Automata: From Boolean to Quantitative Verification*, ENS Cachan, March 13, 2012

### 8.3. Popularization

- Hubert Comon-Lundh, *Le vote électronique*, Institut des Hautes études en Sciences et Technologies (IHEST), Jan 20, 2012
- Stéphanie Delaune, member of the scientific mediation committee at Inria Saclay. (“Mediation” is the new name for popularization.)
- Jean Goubault-Larrecq, *Sécurité informatique*, talk and discussion with the public at the “débat citoyen” organized by Inria, Alan Turing building, Inria Saclay, November 19, 2012
- Jean Goubault-Larrecq, breakfast with the press, organized by CNRS, on computer security, November 29, 2012
- Stéphanie Delaune gave two popularization talks, *Ces protocoles qui nous protègent*, at *Journée Régionale de l’APMEP - Haute-Normandie*, Rouen, April 18, and at *Journée de rentrée de l’ENS Cachan*, Cachan, September 7.
- Stéphanie Delaune was interviewed by a journalist in charge of a special issue on cryptography for the magazine “Cahiers Sciences et Vie”.
- Rémy Chrétien, *Le vote électronique*, article for the ANAJ-IHEDN Cybersecurity newsletter, to be published.

## SELECT Project-Team

## 9. Dissemination

### 9.1. Scientific Animation

#### 9.1.1. Editorial responsibilities

**Participants:** Gilles Celeux, Pascal Massart, Jean-Michel Poggi.

- Gilles Celeux is Editor-in-Chief of *Statistics and Computing* and of *Journal de la SFdS*. He is Associate Editor of *CSBIGS* and *La Revue Modulad*.
- Pascal Massart is Associated Editor of *Annals of Statistics*, *Confluentes Mathematici*, and *Foundations and Trends in Machine Learning*.
- Jean-Michel Poggi is Associated Editor of *Journal of Statistical Software*, *Journal de la SFdS* and *CSBIGS*.

#### 9.1.2. Invited conferences

**Participants:** Gilles Celeux, Pascal Massart, Jean-Michel Poggi.

- Gilles Celeux was invited speaker to the Method and Research meetings at UNIL (Lausanne) and to the Summer Model-Based Clustering working group in Guelp.
- Pascal Massart has given the "Le Cam lecture" at the last worldwide IMS-Bernoulli meeting in Istanbul.
- Jean-Michel Poggi was invited speaker at SIS 2012, and at 5th International Conference of the ERCIM Working Group on Computing and Statistics, Oviedo, Spain.

#### 9.1.3. Scientific animation

**Participants:** Gilles Celeux, Erwan Le Pennec, Pascal Massart, Jean-Michel Poggi.

- Gilles Celeux is member of the CSS of INRA.
- Gilles Celeux was a member of the scientific committee of SMPGD (Statistical Methods for Post Genomics Data).
- Erwan Le Pennec is a member of the Board of the MAS group of the SMAI (french SIAM).
- Erwan Le Pennec is a member of the Labex AMIES (Agence pour les Mathématiques en Interaction avec les Entreprises et la Société).
- Erwan Le Pennec and Pascal Massart are members of the C.N.U. (section 26).
- Pascal Massart is a senior member of the I.U.F.
- Pascal Massart is a member of the scientific council of the French Mathematical Society.
- Pascal Massart is a member of the scientific council of the Mathematical Department of the Ecole Normale Supérieure de Paris.
- Pascal Massart was a member of the scientific committee of the European Meeting of Statisticians in Piraeus.
- Jean-Michel Poggi is President of the French statistical society (SFdS).
- Jean-Michel Poggi is Vice-President of FENStatS «Federation of European National Statistical Societies»
- Jean-Michel Poggi is Member of the Program Committee of WIPFOR "Workshop on Industry & Practices for Forecasting", June 5-7, 2013, Paris

## 9.2. Teaching - Supervision - Juries

### 9.2.1. Teaching

Master: Gilles Celeux, modèles à structure cachée ISUP 3ème année (Université Paris 6) 20 heures

Master: Gilles Celeux, modèles pour la classification M2 probabilités et statistique, Université Paris Sud, 24 heures

Master: Erwan Le Pennec, Méthode Parcimonieuse en Statistique, 30h, Université Paris Sud, France

Master: Erwan Le Pennec, Méthodes d'ondelettes, 20h, M2, Université Paris Diderot, France

Master: Erwan Le Pennec, Analyse Spectrale, 18h, M1, Ponts Paristech, France

Master: Jean-Michel Poggi, Ondelettes et applications (Master 2 Ingénierie Mathématique, Université Paris Sud) 30 heures

Master: All the other SELECT members are teaching in various courses of different universities and in particular in the M2 "Modélisation stochastique et statistique" of University Paris-Sud.

### 9.2.2. Supervision

PhD : Jairo Cugliari Duhalde, Prédiction d'un processus à valeurs fonctionnelles. Application à la consommation d'électricité, 22/11/2011 at Paris XI Orsay, J.-M. Poggi and Anestis Antoniadis (Univ. Joseph Fourier, Grenoble)

PhD: Caroline Meynet, 2009, Pascal Massart

PhD in progress: Vincent Brault, 2011, Gille Celeux and Christine Keribin

PhD in progress: Claire Caillerie, 2008, Pascal Massart and Frédéric Chazal

PhD in progress: Rémi Fouchereau, 2011, Gille Celeux

PhD in progress: Shuai Fu, 2010, Gille Celeux

PhD in progress: Émilie Devivjer, 2012, Pascal Massart and Jean-Michel Poggi

PhD in progress: Clément Levrard, 2009, Pascal Massart and Gérard Biau (UPMC)

PhD in progress: Farouk Mhamdi, 2012, Jean-Michel Poggi and Meriem Jaïdane (ENIT Tunisie)

PhD in progress: Lucie Montuelle, Sélection de modèles et mélange de gaussiennes en imagerie hyperspectrale, 2011, Erwan Le Pennec

PhD in progress: Nelo Molter Magalães, 2011, Pascal Massart

PhD in progress: Solenne Thivin, 2012, Erwan Le Pennec

PhD in progress: Vincent Thouvenot, 2012, Jean-Michel Poggi and Anestis Antoniadis (Univ. Joseph Fourier, Grenoble)

## 9.3. Popularization

Erwan Le Pennec takes care of a Math en Jeans group at lycée Joliot Curie from Nanterre.

Vincent Brault takes care of a Math en Jeans group at lycée Blaise Pascal from Orsay and is part of the organizing committee of the Orsay conference for April 2013

## TAO Project-Team

# 9. Dissemination

## 9.1. Scientific Animation

- Jamal Atif
  - Co-organiser of RTE workshop, a one-day RFIA associated workshop on Reasoning on Space and Time (<http://www.lri.fr/~atif/RTE2012/>).
  - Reviewer for Information Sciences, Fuzzy Sets and Systems, and many conferences in computer vision
- Anne Auger
  - Member of the ACM-SIGEVO Executive (Special Interest Group on Evolutionary Computation (was the International Society on Genetic and Evolutionary Algorithms before 2006));
  - THRASH, *Theory of Randomized Search Heuristics workshop*, member of Steering Committee;
  - Editorial Board of *Evolutionary Computation*, MIT Press; Guest editor of *Algorithmica* special issue and *ECJ* special issue
  - Proceedings chair of the GECCO 2012 conference
  - Reviewer for *IEEE Trans on Evolutionary Computation*, *ECJ*, *Journal of Global Optimization*, *JMLR*, *JOTA*, *MEME*, PC member of *PPSN*, *GECCO*, *EuroGP*, *FOGA*
  - Co-organizer of *GECCO 2012 Black-Box-Optimization-Benchmarking workshop*.
- Nicolas Bredeche
  - Track chair ALIFE at *GECCO 2012*
  - PC member: *Evostar 2012*, *EvoRobot 2012*, *CEC 2012*, *SAB 2012*
- Philippe Caillou
  - PC member at *ECAI 2012*
  - Coordinator of the *SimTools Network (RNSC Network)*
  - Reviewer for *Simulation*, *Studia Informatica Universalis*
- Cyril Furtlehner
  - Co-organiser of a one-day interdisciplinary workshop <https://who.rocq.inria.fr/Jean-Marc.Lasgouttes/workshop/> on Information processing in complex systems with applications to traffic forecasting at Inria place d'Italie in Paris.
- Cécile Germain
  - PC member for: *IEEE/ACM Cluster, Cloud and Grid Computing (CCGRID)* since 2009; *Utility Cloud Computing (UCC)* since 2011; *IFIP International Conference on Network and Parallel Computing* since 2005; *SP Cloud workshop*; *EGEE/EGI user forum* since 2008.
  - Member (elected) of the University scientific council and board (*Conseil Scientifique de l'Université et bureau*).
- Nikolaus Hansen
  - Editorial Board member of *Evolutionary Computation*, MIT Press;
  - Co-organizer of the *Dagstuhl Seminar 13271 Theory of Evolutionary Algorithms*



- Tutorials at the LION and ACM-GECCO conferences
- Co-organizer of the ACM-GECCO 2012 Black-Box-Optimization-Benchmarking workshop
- PC member of most of the important conferences in the area of Evolutionary Computation
- Yann Ollivier
  - Frequent refereeing for many of the main mathematical journals.
- Marc Schoenauer
  - Elected member of ACM-SIGEVO Executive since 2003 (Special Interest Group on Evolutionary Computation (was the International Society on Genetic and Evolutionary Algorithms before 2006); member of ACM-GECCO Business Committee (2012-2013).
  - Parallel Problem Solving from Nature, Member of Steering Committee (since 1998);
  - Co-chair with Youssef Hamadi (MSR Cambridge) of the LION'6 conference (Learning and Intelligent OptimizatiON) in Paris, January 2012.
  - Editorial Board of *Evolutionary Computation*, MIT Press (Editor in Chief, 2002-2009); *Genetic Programming and Evolvable Machines*, Springer Verlag; *Applied Soft Computing*, Elsevier; *Natural Computing Series*, Springer Verlag.
  - PC member of all important conferences in the area of Evolutionary Computation (ACM-GECCO, PPSN, EvoStar, IEEE-CEC, SEAL, SAC, ...).
  - Honorary Adjunct Professor, School of Computer Science, University of Adelaide, Australia (renewed until end 2015).
- Michèle Sebag
  - Member of the CoNRS; Senior Advisory Board CHIST-ERA; member of the CSFRS (Conseil Supérieur de la Formation et Recherche Stratégique);
  - Pattern Analysis, Statistical Learning and Computational Modelling NoE, Member of Steering Committee (PASCAL 2004-2008; PASCAL2, 2008- );
  - Editorial Board of *Machine Learning Journal*, Springer Verlag; *Genetic Programming and Evolvable Machines*, Springer Verlag.
  - Member of the European Machine Learning and Knowledge Discovery from Databases Steering Committee since 2010;
  - ECCAI Fellow since 2011;
  - Workshop Chair of ECAI 2012 (Montpellier, August 2012);
  - PC member of the major conferences in ML and EC worldwide;
  - reviewer for ERC applications; FNRS (Belgium), NSWO (Netherlands).
  - member of CCSU: LRI, Paris-Sud; LPMA, Paris-Diderot.
- Olivier Teytaud
  - Reviewer for various conferences and journals in optimization and machine learning.
  - Organizer a forum in Taiwan (<http://top.twman.org/2012frtw>) for developing collaborations between European and Taiwanese experts of energy management.
  - Organizer of an international meeting in France (combining academics and companies) as detailed in Section 8.5.1 .

## 9.2. Invited talks

- Anne Auger: GECCO 2012 Tutorial, LION 2012 Tutorial, CMAP Seminar
- Cyril Furtlehner: 4th YSM-SPIP workshop in Sendai

- Yann Ollivier: Oxford (probability and statistics seminar), Orsay (probability and statistics seminar), IRCAM (information geometry seminar).
- Marc Schoenauer:
  - 18th CREST Open Workshop, *Managing and Optimising Multiplicity Computing*, UCL, Londond, UK, 22-23 March 2012;
  - Complex Adaptive Systems Laboratory seminar, University College Dublin, Ireland, 25 May 2012;
  - ECODAM, Doctoral Summer School on Evolutionary Computation and Data Mining, Faculty of Informatics, Iasi University, Romania, 18023 June 2012;
  - Séminaire du département de génie de la production automatisée, Ecole Supérieure de Technologie, Montreal, Canada, 7 Dec. 2012.
- Michéle Sebag:
  - Invited talk at the Spring Workshop on Mining and Learning, Bad Neuenahr, Germany, Apr. 18-20, 2012.
  - Keynote speaker at the 36th Annual Conference of the German Classification Society, Hildesheim, August 1-3, 2012.
  - Invited talk at the Turing's heritage session at ECAI 2012, August 27-31, 2012.
  - Invited talk, Sixth "Starting Artificial Intelligence Research" Symposium, August 27, 2012.
  - Invited tutorial, International Summer School on Resource-aware Machine Learning, Dortmund, Germany, Sept. 4-7, 2012.
  - Invited tutorial, Constraint Programming 2012, Québec, Canada, Oct. 8-12, 2012.
- Olivier Teytaud:
  - has been invited in several universities in Taiwan during his one-year stay in 2011-2012: Kaohsiung NUK; Hsinchu NDHU; Hsinchu NCTU; Hualien NDHU; Tainan NUTN.
  - was invited at the Bielefeld "search methodologies" seminar 2012 ([booklet](#)).
  - invited speaker at the "Unexpected Results" workshop at ECML-PKDD, Sept. 2012.

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

Jamal Atif

Licence (ou équivalent) : approx. 192h (Computer science), L1, IUT Orsay, Univ. Paris-Sud, France.

Master (ou équivalent) : approx. 18h (Robotics and Autonomous agents), M2R, Univ. Paris-Sud, France.

“Directeur d’études” at Computer science department of IUT d’Orsay, Univ. Paris-Sud, France

Anne Auger

Master : 12h (Optimization) M2R, Univ. Paris-Sud, France, 20 h (Stochastic Optimization) Ecole Centrale Paris

Doctorat : 4h (Stochastic numerical optimization by Evolution Strategies) Evolution Artificielle Summer School, 2h (Covariance Matrix Adaptation Evolution Strategy - together with N. Hansen) ACM-GECCO Tutorial, 2h (CMA-ES tutorial) LION Conference invited tutorial

Nicolas Bredèche

Licence (ou équivalent) : approx. 80h (Artificial Life), L2, Univ. Paris-Sud, France.

Master (ou équivalent) : approx. 120h (Evolutionary Computation, Artificial Intelligence), L2, Univ. Paris-Sud, France. Including 15h Evolutionary Robotics, M2R.

Philippe Caillou

Licence (ou équivalent) : approx. 192h (Computer science for managers), L1, IUT Sceaux, Univ. Paris-Sud, France.

Master (ou équivalent) : approx. 27h (Multi-Agents Systems), M2R, Univ. Paris-Sud, France.

Master (ou équivalent) : 3h (Multi-Agent Based Simulation), M2R, Univ. Paris-Dauphine, France.

Michèle Sebag

Licence (ou équivalent) : approx. 24h (Introduction to Machine Learning), L3 ENS-Cachan, France.

Master (ou équivalent) : approx. 12h (Apprentissage Statistique et Optimisation, TC2), M2R, Univ. Paris-Sud, France.

Master (ou équivalent) : approx. 12h (Apprentissage Statistique, Optimisation et Applications), M2R, Univ. Paris-Sud, France.

### 9.3.2. Supervision

PhD & HdR :

Rémi Bardenet, *Méthodes d'échantillonnage pour l'Inférence et l'Optimisation en Physique des Particules*, Université Paris-Sud, Dec. 2012, B. Kegl [1].

Zyed Bouzarkouna, *Optimisation de Puits Non Conventionnels : Type, Position et Trajectoire*, Université Paris-Sud, April 2012, A. Auger and M. Schoenauer [2]

Mouadh Yagoubi, *Multi-objective parallel evolutionary algorithms : Application on Diesel Combustion*, Université Paris-Sud, July 2012, M. Schoenauer and Ludovic Thobois (ex-PSA) [3].

L. Veysseire, *Courbure de Ricci grossière de processus markoviens*, Ecole normale supérieure de Lyon, Juillet 2012, Y. Ollivier.

#### PhDs in progress

Riad Akrou, *Autonomous Robotics based on Information Theory*, Université Paris-Sud, Nov. 02., 2010, M. Sebag

Ouassim Ait Elhara, *Stochastic Large Scale Optimization*, Université Paris-Sud, October 2012, A. Auger and N. Hansen

Ludovic Arnold, *Architectures Profondes pour la Vision Computationnelle*, Université Paris-Sud, Jan. 01., 2010, H. Paugam-Moisy and Ph. Tarroux (LIMSI) (defence in April 2013).

Alexandre Chotard, *Enhancement and Analysis of Evolution Strategies*, Université Paris-Sud, Oct. 01., 2011, A. Auger and N. Hansen

Adrien Couëtoux *Monte-Carlo Tree Search and other Reinforcement Learning methods for Energy Management Applications*, Université Paris-Sud, Sept. 01., 2010, O. Teytaud

Dawei Feng *Détection et diagnostic d'anomalies dans les systèmes globalisés à grande échelle*, Université Paris-Sud, Oct. 01., 2010, C. Germain

Jérémie Decock *Comparison and Combination of Control and Reinforcement Learning methods for Energy Management Applications*, Université Paris-Sud, Oct. 03., 2011, O. Teytaud

Nicolas Galichet *Integrity Preserving Policy Learning*, Université Paris-Sud, Oct. 01., 2011, M. Sebag

Moez Hammami, *Traitement de Données Financières Haute Fréquence: Exploration de Méthodes de Construction Inductive à Grandes Echelle*, Université Paris Diderot, May 01., 2011, M. Sebag

Jean-Baptiste Hoock, *Goal Planning with Massive Sets of Heuristics*, Université Paris-Sud, Nov. 01., 2009, O. Teytaud

Yoann Isaac, *Apprentissage Génératif pour les Interfaces Cerveau-Machine*, Université Paris-Sud, Oct. 03., 2011, C. Gouy-Pallier (CEA) and M. Sebag

Ilya Loshchilov, *Rank-based Meta-models for Costly Optimization*, Université Paris-Sud, Oct. 01., 2009, M. Schoenauer and M. Sebag (defence in January 2013).

Gaétan Marceau-Caron, *Optimisation Globale du Trafic Aérien*, Université Paris-Sud, May 11., 2011, A. Hadjaz (Thalés Air Systems), P. Savéant (Thalés R&D) and M. Schoenauer

Victorin Martin, *Modélisation Probabiliste et Inférence par Propagation de Croyances : Application au Trafic Routier*, Université Paris-Sud, Dec. 01., 2009, A. de la Fortelle and J.-M. Lasgouttes (Inria Rocquencourt)

Jean-Marc Montanier, *Robotique Evolutionnaire pour l'Adaptation en Ligne d'un Essaim de Robot*, Université Paris-Sud, Oct. 01., 2009, N. Bredeche (defence in March 2013).

Weijia Wang, *Théorie de l'Information pour l'Apprentissage statistique en Robotique Embarquée*, Université Paris-Sud, Oct.01., 2010, M. Sebag

### 9.3.3. Juries

- Jamal Atif was a referee of the mid-term PhD committee of Yuan Yang (Telecom-ParisTech, April 2012)
- Philippe Caillou was in the PhD committee of An Vo Duc (LIP6 Paris, November 2012).
- Yann Ollivier was an external referee for the Habilitation of Benoît Kloeckner (Grenoble, December 2012).
- Marc Schoenauer was external reviewer for Eduardo Vellasques' PhD (Ecole de Technologie Supérieure, Université du Québec, Canada, Informatique), PhD committee member for Vincent Baudouin (Université de Toulouse, Mathématiques Appliquées), Gabriel Synaev (Université de Grenoble, Informatique), Marco Montemuro (Université Pierre et Marie Curie, Mécanique), Giovanni Granato (Ecole Polytechnique, Mathématiques Appliquées), and HdR committee member for Daniel Delahaye (Université de Toulouse, Mathématiques Appliquées) and Frédéric Lardeux (Université d'Angers, Informatique). He was also external reviewer within the Tenure Committee for Prof. Dirk Arnold, Dalhousie University, Canada.
- Michèle Sebag was external reviewer for Michael Aupetit (HdR), Hai Le Son (PhD)
- Olivier Teytaud was in the PhD committee for Benoit Gandar (Clermont-Ferrand, November 2012).

## 9.4. Popularization

- Olivier Teytaud has written a popularization paper on [Chess algorithms](#) in Interstices.
- We made two demonstrations, in Taiwan, of parallel automatic player evaluation; the events were advertised in general audience newspapers ([MoGo web page](#)). Our Taiwanese partner has a motivation around PISA (international student assessment) and eTeaching.
- We also made in Brisbane a general audience demonstration of games against humans, with 7 wins out of 12 against professional players in fair games in 7x7 ([MoGo web page](#)).
- Yann Ollivier organizes a bi-monthly math seminar for undergrad students on Saturdays at Institut Henri Poincaré (together with X. Caruso, I. Kortchemski, R. Mansuy and A. Taveneaux), with 100+ participants at each session.
- Yann Ollivier takes part in the organization of the European Union Contest for Young Scientists (science fair for high school students from 30+ countries organized by the European Commission).
- Yann Ollivier belongs to the scientific steering committee for the elaboration of a brochure *L'explosion des mathématiques* presenting a wide range of applications of mathematics, edited by the SMF and SMAI.
- Philippe Caillou was a teacher at the GAMA Winter School in Can Tho (Vietnam) in November 2012. The winter school objective was the diffusion of multi-agent based simulation methodology with the GAMA Platform to non-computer scientist in Can Tho Biology and Environment University.

## TOCCATA Team

# 9. Dissemination

## 9.1. Scientific Animation

### 9.1.1. Event organization

- C. Paulin organizer of the first DigiCosme Colloquium (<http://labex-digicosme.fr/Colloque2012>), Sept. 12-13, École Polytechnique, France.
- C. Paulin organizer of the 4th Conference on Interactive Theorem Proving (<http://itp2013.inria.fr/>) that will happen in July 2013.
- C. Marché organizer of the first DigiCosme Spring School (<http://labex-digicosme.fr/Spring+School+2013>) whose theme is *Program Analysis and Verification* and will happen in April 2013.

### 9.1.2. Editorial boards

- S. Boldo is member of the editorial committee of the popular science web site *interstices*, <http://interstices.info/>.
- J.-C. Filliâtre is member of the editorial board of the *Journal of Functional Programming*.
- C. Paulin is member of the editorial board of the *Journal of Formalized Reasoning*.

### 9.1.3. Learned societies

- J.-C. Filliâtre is a member of IFIP Working Group 1.9/2.15 (Verified Software)

### 9.1.4. Program committees

- C. Marché, *Tool Chair* of the program committee of the 19th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2013, Rome, Italy, <http://www.etaps.org/2013/tacas13>), part of the ETAPS joint Conference. The tool chair is responsible for the evaluation and selection of tool papers and tool demonstrations, following precise guidelines given in the call for papers. This initiative of TACAS aims at making the selection of such submissions more accurate (<http://www.etaps.org/2013/tacas13/tacas13-tool-papers-menu>).
- S. Conchon, member of the program committee of the 10th International SMT workshop 2012, Manchester, UK.
- C. Paulin, member of the program committee of the third and fourth conferences on Interactive Theorem Proving (ITP 2012 & 2013 <http://itp2013.inria.fr/>).
- É. Contejean is a member of the program committees of the 23rd International Conference on “Rewriting Techniques and Applications” (RTA 2012 <http://rta2012.trs.cm.is.nagoya-u.ac.jp/>) and of the 24th International “Conference on Automated Deduction” (CADE-24 <http://www.cade-24.info/>).
- J.-C. Filliâtre is a member of the program committees of the second conference on Interactive Theorem Proving (ITP 2011), the workshop “Analyze to Compile, Compile to Analyze” (ACCA 2011), the conference Verified Software: Theories, Tools and Experiments (VSTTE 2012), the conference NASA Formal Methods (NFM 2012), and the 10th Asian Symposium on Programming Languages and Systems (APLAS 2012).

### 9.1.5. Invited Presentations

- S. Boldo, “Preuve de programmes d’analyse numérique”, seminar of the AriC team, Lyon, January 5th.

- C. Lelay, “Improving Real Analysis in Coq: a User-Friendly Approach to Integrals and Derivatives”, Coqapprox seminar (for the Tamadi ANR), Lyon, July 11th.
- C. Lelay, “Improving Real Analysis in Coq: a User-Friendly Approach to Integrals and Derivatives”, LAC/LaMHA/LTP Days, Orléans, October 25th.
- G. Melquiond, “Wave Equation Numerical Resolution: a Comprehensive Mechanized Proof of a C Program”, CaCoS Workshop, Grenoble, July 26th.
- J.-C. Filliâtre, “Combining Interactive and Automated Theorem Proving in Why3”, Automation in Proof Assistants 2012, Tallinn, Estonia, April 2012.
- J.-C. Filliâtre, “Combining Interactive and Automated Theorem Proving using Why3 (invited tutorial)”, Second International Workshop on Intermediate Verification Languages (BOOGIE 2012), Berkeley, California, USA, July 2012.

## 9.2. Interaction with the scientific community

### 9.2.1. Collective responsibilities within Inria

- S. Boldo, elected member of the Inria Evaluation Committee. She was in the committee in charge of selecting the Inria permanent researchers (CR2 and CR1).
- S. Boldo was in the committee in charge of selecting an Inria support staff (TR, *technicien de recherche*) for the Saclay finance and accounting service (SAF).
- S. Boldo, member of the CLHS, *comité local hygiène et sécurité* and member of the CLFP, *comité local de formation permanente*.
- S. Boldo, member of the committee for the monitoring of PhD students (*commission de suivi des doctorants*).
- S. Boldo, scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria.
- S. Boldo, member of the popularization committee, *comité de médiation scientifique*, of Inria.
- C. Paulin was a member of the “Commission Scientifique” (in charge of selecting PhD students, post-doc, invited researchers funded by Inria Saclay - Île-de-France) until Aug.

### 9.2.2. Collective responsibilities outside Inria

- A. Charguéraud is vice-president of “France-IOI”, the organization in charge of the selection and the training of the French team to the International Olympiads in Informatics.
- É. Contejean and C. Marché, nominated members of the “*conseil du laboratoire*” of LRI since April 2010.
- É. Contejean, elected member of the “*Section 6 du Comité National de la Recherche Scientifique*” since September 2012.
- S. Conchon, elected member of the “*Conseil scientifique de l’Université Paris-Sud*” since June 2012.
- C. Lelay, elected member of the “*conseil du laboratoire*” of LRI since November 2011.
- C. Lelay, elected representative of the students at the Doctoral School in Computer Science at University Paris-Sud since November 2011.
- C. Marché (since April 2007) and C. Paulin (since Sep. 2010), members of the program committee of Digiteo Labs, the world-class research park in Île-de-France region dedicated to information and communication science and technology, <http://www.digiteo.fr/>.
- C. Marché and S. Boldo, members of the “*jury de l’agrégation externe de mathématiques*” as experts in computer science, since 2012.

- G. Melquiond and C. Paulin, members of the “*commission consultative de spécialistes de l’université*”, Section 27, University Paris-Sud since April 2010.
- G. Melquiond, elected officer of the IEEE-1788 standardization committee on interval arithmetic since 2008.
- G. Melquiond is an examiner for the computer science entrance exam to École Normale Supérieure since 2010.
- C. Paulin, head of the new *Digicosme* laboratory of excellence (<http://labex-digicosme.fr/>)
- C. Paulin, director of the Doctoral school in Computer Science at University Paris-Sud <http://edips.lri.fr/>, until August 2012. Now in charge of the assembly of directors of graduate schools at the Université Paris-Sud.
- C. Paulin, member of the board of the “Commission Académique Consultative” of the Initiative d’Excellence Paris-Saclay.
- C. Paulin, president of the Computer Science Department of the University Paris-Sud <https://www.dep-informatique.u-psud.fr/>, since February 2012.
- C. Paulin participated to the hiring committee for a senior lecturer position at in Logic of Programs at University of Göteborg in Sweden.
- C. Paulin participated to two hiring committees in France (professor positions at Paris-Sud University and CNAM)
- J.-C. Filliâtre is *correcteur au concours d’entrée à l’École Polytechnique* (computer science examiner for the entrance exam at École Polytechnique) since 2008.
- A. Paskevich is in charge (together with C. Bastoul) of Licence professionnelle PER (L3) at IUT d’Orsay, Paris-Sud University since September 2012.

## 9.3. Teaching - Supervision - Juries

### 9.3.1. Teaching

Master Parisien de Recherche en Informatique (MPRI) <http://mpri.master.univ-paris7.fr/>: “Proofs of Programs” <http://www.lri.fr/~marche/MPRI-2-36-1/> (M2), C. Marché (12h), G. Melquiond (12h), Université Paris 7, France

Master Parisien de Recherche en Informatique (MPRI) <http://mpri.master.univ-paris7.fr/>: “Automated Deduction” <https://wikimpri.dptinfo.ens-cachan.fr/doku.php?id=cours:c-2-5> (M2), S. Conchon (9h), É. Contejean (10h30), Université Paris 7, France

GDR Informatique-Mathématique school for young researchers: “Arithmétique des ordinateurs et preuves formelles” [35], S. Boldo (2h), G. Melquiond (2h).

C. Paulin lecture notes on “Introduction to the *Coq* proof-assistant for practical software verification” at the LASER 2011 Summer School on Software Engineering have been published [37].

École Jeunes Chercheurs en Programmation (EJCP 2012): J.-C. Filliâtre, “Vérification Déductive de Programmes avec Why3” (4h) [36].

Licence (DUT): “Mathématiques” (L1), “Algo Langages” (L1), C. Lelay (64h, “moniteur” position), Université Paris-Sud (IUT d’Orsay)

Licence (L2): “Mathématiques pour l’Informatique”, C. Paulin (40h), D. Cousineau (20h), Université Paris-Sud

Licence (L3): “Eléments de logique pour l’informatique”, C. Paulin (50h), Université Paris-Sud, France

Licence (L3): “Programmation fonctionnelle”, S. Conchon (25h), A. Tafat (50h), M. Iguernelala (50h), Université Paris-Sud, France

Licence (L3): “Projet de programmation”, S. Conchon (25h), Université Paris-Sud, France

Master (M1): “Projet de compilation” A. Tafat (33h), M. Iguernelala (33h), Université Paris-Sud, France

Master (M1): “Introduction à la compilation”, S. Conchon (50h), Université Paris-Sud, France

Licence: “Langages de programmation et compilation” (L3), J.-C. Filliâtre (36h), École Normale Supérieure, France

Licence (DUT): “Systèmes d’exploitation” (L1 and L2), “Réseaux” (L2), A. Paskevich (140h), Université Paris-Sud (IUT d’Orsay), France

Licence professionnelle: “Programmation concurrente” (L3), A. Paskevich (36h), Université Paris-Sud (IUT d’Orsay), France

Licence: “INF421” (L3) et “INF431” (L3), J.-C. Filliâtre (70h), École Polytechnique, France

Master (M1): “Compilation”, C. Dross, Université Paris-Sud (PolyTech)

### 9.3.2. Supervision of internships

J.-C. Filliâtre supervised the L3 internship of Rémy El Sibaïe on “Une bibliothèque OCaml pour la combinatoire” (May–June 2012) [85].

J.-C. Filliâtre supervised the M1 internship of Levs Gondelmans on “A Simple Induction Tactic for the Why3 Platform” (April–August 2012).

C. Paulin supervised the M2 internship of Nicolas Lupinski on “formalisation and proofs of program transformations for automated parallelisation”.

### 9.3.3. Supervision of Theses

PhD: T. Nguyen, Taking architecture and compiler into account in formal proofs of numerical programs [12], Université Paris-Sud, June 2012, S. Boldo, C. Marché

PhD in progress: M. Iguernelala, Forward and Backward Strategies in SMT solvers, since September 2009, S. Conchon, É. Contejean

PhD in progress: A. Tafat, Modular Verification of Pointer Programs, since September 2009, C. Marché

PhD in progress: P. Herms, Certification of a Tool Chain for Verification of C programs, since October 2009, C. Marché, B. Monate (CEA List). Defence scheduled on January 14th, 2013.

PhD in progress: C. Dross, Theories and Techniques for Automated Proof of programs, since January 2011, C. Marché, A. Paskevich, and industrial supervisors Y. Moy and J. Kanig from AdaCore company.

PhD in progress: A. Mebsout, SMT-based Model-Checking, since September 2011, F. Zaidi, S. Conchon

PhD in progress: C. Lelay, Real numbers for the Coq proof assistant, since October 2011, S. Boldo, G. Melquiond.

PhD in progress: S. Dumbrava, Towards data certification, since October 2012, V. Benzaken, É. Contejean

### 9.3.4. Juries

- S. Boldo: PhD committee of Érik Martin-Dorel “Contributions to the Formal Verification of Arithmetic Algorithms” (ENS de Lyon, LIP laboratory, September 26th, 2012)
- C. Marché: reviewer, PhD committee of Morayo Adedjouma “Requirements Engineering Process according to Automotive Standards in a Model-Driven Framework” (University Paris-Sud, LISE laboratory of CEA-List, July 12th, 2012)
- C. Marché: president of the PhD committee of Florian Noyrit “Conception Dirigée par les modèles à l’aide de langages de modélisation hétérogènes : application aux profil UML” (University Paris-Sud, LISE laboratory of CEA-List, October 25th, 2012)



- C. Marché: president of the PhD committee of Takoua Ben Rhouma Aouina “Composition des modèles de lignes de produits logiciels” (University Paris-Sud, LISE laboratory of CEA-List, November 29th, 2012)
- C. Marché: president of the PhD committee of Abderrahmane Feliachi “Semantics Based Testing for Circus” (University Paris-Sud, LRI laboratory, December 12th, 2012)
- C. Marché: reviewer, Habilitation committee of Sylvie Putot “Static Analysis of Numerical Programs and Systems” (University Paris-Sud, MeASI laboratory of CEA-List and École Polytechnique, December 13th, 2012)
- C. Paulin: reviewer, PhD committee of Thomas Braibant, “Algèbres de Kleene, Automates, Circuits, Preuve formelle, Réécriture” (Université de Grenoble, Inria Rhone-Alpes, February 17th, 2012)
- C. Paulin: reviewer, PhD committee of Sylvain Héraud, “Vérification Semi-automatique de primitives cryptographiques” (Université de Nice Sophia-Antipolis, Inria Sophia Antipolis, March 12th, 2012)
- C. Paulin: president of the PhD committee of Stéphane Glondu “Vers une certification de l’extraction de Coq”, (Université Paris Diderot, Laboratory PPS, June 1st, 2012)
- C. Paulin: reviewer, Habilitation committee of David Pichardie “Toward a Verified Software Toolchain for Java” (Université de Rennes, IRISA, November 19, 2012)
- C. Paulin: president of the PhD committee of Marc Lasson “Réalabilité et Paramétrie dans les systèmes de type purs” (Université de Lyon, LIP Laboratory, November 20, 2012)
- J.-C. Filliâtre: reviewer, PhD committee of Barbara Vieira, “Formal Verification of Cryptographic Software Implementations” (Universidade do Minho, Braga, Portugal, June 25, 2012).
- J.-C. Filliâtre: Habilitation committee of Etienne Lozes, “Separation Logic: Expressiveness and Copyless Message-Passing” (ENS Cachan, July 3, 2012).
- J.-C. Filliâtre: reviewer, PhD committee of Cyril Cohen, “Formalized algebraic numbers: construction and first order theory” (École Polytechnique, November 20, 2012).
- J.-C. Filliâtre: reviewer, Habilitation committee of Frédéric Gava “BSP, bon à toutes les sauces” (Université Paris-est, December 10, 2012).

## 9.4. Industrial Dissemination

- J.-C. Filliâtre and C. Marché started in 2011 a collaboration with D. Mentré at Mitsubishi Electric R&D Centre Europe (Rennes), about the use of the *Why3* environment and its back-end provers as an alternative to the built-in prover of Atelier B. This collaboration led first to a publication [29] and then became part of the new ANR project BWare.
- Alt-Ergo is now used in the Spark Pro toolset, developed by Altran-Praxis, for the engineering of high-assurance software. Alt-Ergo can be used by customers as an alternate prover for automatically proving verification conditions. Its usage is described in the new edition of the Spark book (<http://www.altranpraxis.com/book/>, Chapter “Advanced proof tools”)
- In the context of the Hi-Lite project, the Adacore company (Paris) implements a new tool GnatProve which aims at formal verification of Ada programs. They translate annotated Ada code into the *Why3* intermediate language and then use the *Why3* system to generate proof obligations and discharge them with Alt-Ergo, or other available back-end provers. GnatProve is a prototype that aims at becoming the successor of Spark (<http://www.open-do.org/2012/11/30/future-version-of-spark-will-be-based-on-ada-2012/>).
- S. Conchon, A. Mebsout and F. Zaidi (ForTesSe team, LRI) continued their collaboration with S. Krstic and A. Goel (Intel Strategic Cad Labs in Hillsboro, OR, USA) that aims in the development of the SMT-based model checker Cubicle (<http://cubicle.lri.fr>).

## 9.5. Popularization

- Since April 2008, S. Boldo is member of the editorial committee of the popular science web site <http://interstices.info/>.
- S. Boldo, scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria.
- S. Boldo, member of the popularization committee, *comité de médiation scientifique*, of Inria.
- S. Boldo visited two classes for the beginning of the computer science teaching in 2nde: lycée Jean Jaurès at Chatenay-Malabry and Jacques Monod at Clamart in January 2012.
- S. Boldo is responsible for a *mission doctorale* for popularization. She is in charge of Li Gong of the LIMSI laboratory.
- S. Boldo, head for the *Fête de la science* for the LRI laboratory in 2012. The laboratory welcomed both industrials, pupils and general public: 6 different stands, 6 classes, a total of more than 250 visiting persons.
- S. Boldo and A. Charguéraud belong to the organization committee of the *Castor informatique* <http://castor-informatique.fr/>, an international competition to present computer science to pupils (from *6ème* to *terminale*). More than 91,000 teenagers played on the 40 proposed exercises in November 2012.
- C. Lelay and A. Tafat are involved in the *Fête de la science* 2012.

## TYPICAL Project-Team

# 8. Dissemination

## 8.1. Teaching - Supervision - Juries

### 8.1.1. Teaching

Benjamin Werner is president of the Computer Science Department of Ecole Polytechnique and, as such main responsible for CS teaching in this university.

Licence : Benjamin Werner, Ecole Polytechnique, *Algorithmique et Programmation*, lectures, 45 hours *équivalents TDs*.

Master : Benjamin Werner, MPRI (M2), Fondements des Systèmes de Preuves, Ecole Polytechnique et U. Paris 7, 50 heures *équivalents TDs*.

Master : Assia Mahboubi and Bruno Barras, MPRI (M2), Preuves en Coq, Ecole Polytechnique et U. Paris 7, 50 heures *équivalents TDs*.

Licence : Victor Magron and Chantal Keller, Ecole Polytechnique, *Algorithmique et Programmation*, TDs, 48 hours *équivalents TDs*.

Master : Chantal Keller, PA Informatique de l'Ecole Polytechnique, Raisonnement mathématique assisté par ordinateur, TDs, 20 hours *équivalents TDs*.

### 8.1.2. Supervision

PhD & HdR :

PhD : Cyril Cohen, Formalized algebraic numbers: construction and first-order theory, Ecole Polytechnique, november 20<sup>th</sup>, Assia Mahboubi and Benjamin Werner.

PhD in progress :Chantal Keller, A Matter of Trust New Reflexive Decision Procedures in Coq Using External Tools, since sept. 2009, Benjamin Werner

PhD in progress :Victor Magron, Certifiable automatic proofs of real inequalities, since sept. 2009, Benjamin Werner and Stéphane Gaubert.

PhD in progress: Alexis Bernadet, since 2010. Supervised by Stéphane Lengrand and Benjamin Werner.