



RESEARCH CENTER
Paris

FIELD

Activity Report 2017

Section Dissemination

Edition: 2018-02-19

ALGORITHMICS, PROGRAMMING, SOFTWARE AND ARCHITECTURE

1. ANTIQUE Project-Team	4
2. AOSTE2 Team	7
3. CASCADE Project-Team	9
4. GALLIUM Project-Team	12
5. PARKAS Project-Team	14
6. PI.R2 Project-Team	16
7. POLSYS Project-Team	21
8. PROSECCO Project-Team	25
9. SECRET Project-Team	28

APPLIED MATHEMATICS, COMPUTATION AND SIMULATION

10. MATHERIALS Project-Team	34
11. MATHRISK Project-Team	43
12. MOKAPLAN Project-Team	48
13. QUANTIC Project-Team	50
14. SIERRA Project-Team	53

DIGITAL HEALTH, BIOLOGY AND EARTH

15. ANGE Project-Team	56
16. ARAMIS Project-Team	63
17. MAMBA Project-Team	67
18. MYCENAE Project-Team	70
19. REO Project-Team	72
20. SERENA Project-Team	79
21. TAPDANCE Team	83

NETWORKS, SYSTEMS AND SERVICES, DISTRIBUTED COMPUTING

22. ALPINES Project-Team	84
23. DYOGENE Project-Team	87
24. EVA Project-Team	89
25. GANG Project-Team	96
26. MIMOVE Team	100
27. RAP2 Team	103
28. REGAL Project-Team	105
29. WHISPER Project-Team	109

PERCEPTION, COGNITION AND INTERACTION

30. ALMANACH Team	111
31. COML Team	117
32. RITS Project-Team	119
33. Valda Team	124
34. WILLOW Project-Team	127

ANTIQUÉ Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Chair of Conference Program Committees

- Jerome Feret served as co-Chair of CMSB 2017 (Computational Methods in Systems Biology).
- Xavier Rival is serving as Chair of the Artifact Evaluation Committee of SAS 2018 (Static Analysis Symposium).

10.1.1.2. Member of the Conference Program Committees

- Jerome Feret served as a Member of the Program Committee of TPA 2017 (Tools and Methods of Program Analysis).
- Jerome Feret served as a Member of the Program Committee of JOBIM 2017 (Journées Ouvertes en Biologie, Informatique et Mathématiques).
- Jerome Feret served as a Member of the Program Committee of SASB 2017 (Static Analysis and System Biology).
- Jerome Feret is serving as a Member of the Program Committee of LICS 2018 (Logic in Computer Science).
- Jerome Feret is serving as a Member of the Program Committee of VEMDP 2018 (Verification of Engineered Molecular Devices and Programs).
- Jerome Feret is serving as a Member of the Program Committee of SAS 2018 (Static Analysis Symposium).
- Jerome Feret is serving as a Member of the Program Committee of CMSB 2018 (Computational Methods in Systems Biology).
- Xavier Rival was a Member of the Program Committee of SAS 2017 (Static Analysis Symposium).
- Xavier Rival is serving as a Member of the Program Committee of SAS 2018 (Static Analysis Symposium).
- Xavier Rival was a Member of the Program Committee of Web Design, Analysis, Programming and Implementation of the WWW'18 Conference.
- Xavier Rival was a Member of the Extended Review Committee of PLDI 2018 (Programming Languages Design and Implementation).
- Cezara Dragoi was a member of Programming languages design and implementation PLDI'17.
- Cezara Dragoi was a member of Computer Aided Verification CAV'18.

10.1.1.3. Reviewer

- Jerome Feret served as reviewer for CONCUR 2017 (Concurrency Theory).
- Jerome Feret served as reviewer for LICS 2017 (Logic in Computer Science).
- Jerome Feret served as reviewer for VMCAI 2017 (Verification, Model Checking, and Abstract Interpretation).

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

- Jerome Feret is a member of the editorial board of the Frontiers in Genetics journal and the Open Journal of Modeling and Simulation.
- Jerome Feret serves as co-Editor of an Issue of the Theoretical Computer Science journal, that is composed of papers from SASB 2016, and is expected to appear in 2018.
- Jerome Feret serves as Editor of an Issue of the IEEE/ACM Transactions on Computational Biology and Bioinformatics, that is composed of papers from CMSB 2016, and is expected to appear in 2019.
- Xavier Rival serves as Editor of an Issue of the Formal Methods in System Design Journal, that is composed of a selection of papers from SAS 2016, and is expected to appear in 2018.

10.1.2.2. Reviewer - Reviewing Activities

- Jerome Feret served as a Reviewer for FMSD (Formal Methods in System Design).
- Jerome Feret served as a Reviewer for TCS (Theoretical Computer Sciences).
- Jerome Feret served as a Reviewer for TCBB (IEEE/ACM Transactions on Computational Biology and Bioinformatics).
- Jerome Feret served as a Reviewer for TCL (Transactions on Computational Logic).
- Xavier Rival served as a Reviewer for ACM TOPLAS (Transactions On Programming Languages and Systems).
- Xavier Rival served as a Reviewer for ACM TOPS (Transactions On Privacy and Security).

10.1.3. Invited Talks

- Jerome Feret gave a talk on automatic reduction of models of intra-cellular signaling pathways at the Dagstuhl Seminar on Algorithmic Cheminformatics (5–10 November 2017).
- Cezara Dragoi was invited speaker at the 6th South of England Regional Programming Language Seminar University College London, Workshop on Software Correctness and Reliability at ETH Zurich, and Workshop on Formal Reasoning in Distributed Algorithms (FRIDA), Wien Austria.

10.1.4. Leadership within the Scientific Community

Xavier Rival is a member of the IFIP Working Group 2.4 on Software implementation technology.

10.1.5. Research Administration

Jerome Feret and Xavier Rival are members of the Laboratory Council of DIENS.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence:

- Jerome Feret, and Marc Chevalier, Mathematics, 40h, L1, FDV Bachelor program (Frontiers in Life Sciences (FdV)), Université Paris-Descartes, France.
- Jerome Feret and Xavier Rival, “Semantics and Application to Verification”, 36h, L3, at École Normale Supérieure, France.
- Xavier Rival, “Introduction to Static Analysis”, 8h, L3, at École des Mines de Paris, France.
- Xavier Rival “Programmation Avancée”, 18h, L3, at École Polytechnique, France.
- Cezara Dragoi “Les principes des langages de programmation”, 18h, L1, at École Polytechnique, France.

Master:

- Xavier Rival, “Verification” Lab Course, 20h, M1, École Polytechnique, France.

- Xavier Rival, “Protocol Safety and Verification”, 12h, M2, Advanced Communication Networks Master, France.
- Xavier Rival, “Program Analysis”, 24h, M2, Korea Advanced Institute for Science and Technology (KAIST), South Korea.
- Cezara Drăgoi, Jerome Feret, Antoine Miné, and Xavier Rival, “Abstract Interpretation: application to verification and static analysis”, 72h, M2. Parisian Master of Research in Computer Science (MPRI), France.
- Vincent Danos and Jerome Feret (with Jean Krivine), Computational Biology, 28h, M1. Interdisciplinary Approaches to Life Science (AIV), Master Program, Université Paris-Descartes, France.

10.2.2. Supervision

- PhD defended: Ferdinanda Camporesi, Formal and exact reduction for differential models of signaling pathways in rule-based languages. Defended the 23th of January, 2017 and supervised by Jerome Feret.
- PhD in progress: Marc Chevalier, Static analysis of Security Properties in Critical Embedded Software. started in 2017 and supervised by Jerome Feret
- PhD in progress: Hugo Illous, Relational Shape Abstraction Based on Separation Logic, started in 2015 and supervised by Xavier Rival and Matthieu Lemerre (CEA)
- PhD in progress: Huisong Li, Disjunctive Shape Abstraction for Shared Data-Structures, started in 2014 and supervised by Xavier Rival
- PhD in progress: Jiangchao Liu, Static Analysis for Numeric and Structural Properties of Array Contents, started in 2014 and supervised by Xavier Rival

10.2.3. Juries

- Jerome Feret served as a member of the Jury of the PhD of Jean Coquet (Defended the 20th of December, 2017).
- Xavier Rival served as a Reviewer in the Jury of the PhD of Ahmad Salim Al-Sibahi (Defense planned for the 11th of January, 2018).

10.2.4. Responsibilities

- Jerome Feret is a member of the Monitoring Committee for PhD Studies (CSD) of Inria Paris.
- Jerome Feret is deputy head of studies of the Computer Science department of École normale supérieure.

10.2.5. Selection committees

- Jerome Feret was a member of the recruitment committee for an assistant professor in Evry University 2017.
- Jerome Feret is a member of the recruitment committee for an assistant professor in Paris-Diderot University 2018.

AOSTE2 Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Steering Committees

- Liliana Cucu-Grosjen is member of the steering committees of the following conferences and workshops: RTSS, RTAS, RTNS, WMC, RTSOPS.
- Rob Davis is member of the steering committees of the following conferences and workshops: RTSS, RTAS, RTNS, WMC, RTSOPS.

10.1.1.2. Member of the Organizing Committees

- Liliana Cucu is Local Arrangement Chair of the 38th IEEE Real-time Systems Symposium (RTSS'17).

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

- Liliana Cucu: RTAS, RTNS, WFCS
- Robert Davis: RTSS, RTAS, RTNS
- Adriana Gogonel: ACM RACS, WMC
- Dumitru Potop-Butucaru: ACSO, EMSOFT
- Yves Sorel: DASIP

10.1.2.2. Reviewer

All members of the team are regularly serving as reviewers for the main scientific events of our domain: RTSS, RTAS, RTCSA, RTNS, DATE, ETFA, EMSOFT, DASIP, etc.

10.1.3. Journal

10.1.3.1. Reviewer - Reviewing Activities

All members of the team are regularly serving as reviewers for the main journals of our domain: Journal of Real-Time Systems, Journal of Systems Architecture, Leibniz Transactions on Embedded Systems, IEEE Transactions on Industrial Informatics, etc.

10.1.4. Invited Talks

- Liliana Cucu is keynote speaker at the 11th edition of CRTS, invited speaker at MMR'17 and MEFOSYLOMA seminar.

10.1.5. Leadership within the Scientific Community

Liliana Cucu and Rob Davis are the scientific organizers of the 2nd Dagstuhl seminar on mixed-criticality systems.

10.1.6. Scientific Expertise

- Yves Sorel: Steering Committee of System Design and Development Tools Group of Systematic Paris-Region Cluster.
- Yves Sorel: Steering Committee of Technologies and Tools Program of SystemX Institute for Technological Research (IRT).

10.1.7. Research Administration

- Liliana Cucu-Grosjean is member of Inria Evaluation Commission, co-chair of Inria Committes on gender equality and equal oportunities, and member of the CLHCST.
- Dumitru Potop-Butucaru is member of mobility grant commission for postdocs and invited professors.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master: Liliana Cucu, Distributed Databases and Statistics in Computer Science, 64h, U. Dunarea de Jos, Romania (Invited Professor).

Master: Dumitru Potop Butucaru, A synchronous approach to the design of embedded real-time systems, 30h, M1, EPITA Engineering School, Paris France.

Master: Yves Sorel, Optimization of distributed real-time embedded systems, 38H, M2, University of Paris Sud, France.

Master: Yves Sorel, Synchronous languages and real-time scheduling, 9H, M2, University of Paris-Est Créteil, France.

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

10.2.2. Supervision

PhD: Cristian Maxim, End to end constraints using probabilistic approaches, UPMC, defended December 2017, supervised by Liliana Cucu.

PhD in progress: Slim Ben-Amor, Schedulability analysis of probabilistic real-time tasks under end to end constraints, UPMC, started on September 2016, supervised by Liliana Cucu.

PhD in progress: Keryan Didier, Formal certification of real-time implementations, Université Pierre et Marie Curie/EDITE, started November 2015, supervised by Dumitru Potop Butucaru.

PhD in progress: Cristian Maxim, End to end constraints using probabilistic approaches, UPMC, started March 2014, supervised by Liliana Cucu.

PhD in progress: Evariste Ntaryamira, Analysis of embedded systems with time and security constraints, UPMC, started on January 2017, supervised by Liliana Cucu and Rachel Akimana.

PhD in progress: Walid Talaboulma, Probabilistic timing analysis in presence of dependences, UPMC, started November 2015, co-supervised by Liliana Cucu and Adriana Gogonel.

PhD in progress: Salah-Edinne Saidi, Distributed real-time scheduling for the co-simulation of multiple control models, University of UMPC-Paris-Sorbonne, started December 2014, co-supervised by Nicolas Pernet (IFPEN) and Yves Sorel.

10.2.3. Juries

- Liliana Cucu is Phd reviewer for the thesis of Fabrice Guet, ONERA and ISAE, defended December 2017.
- Liliana Cucu is Phd reviewer for the thesis of Bader Alahmad, University of British Columbia, defended December 2017.
- Liliana Cucu is Phd jury member for the thesis of Romain Gratia, Telecom Paritech, defended January 2017.

10.3. Popularization

Popularization video of the probabilistic notions for mixed-criticality systems https://www.youtube.com/watch?v=sSJT4eGhS_A

CASCADE Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Events and Activities

- a regular seminar is organized: <http://www.di.ens.fr/CryptoSeminaire.html>
- quarterly Paris Crypto Days (<https://pariscryptoday.github.io>) supported by CryptoCloud and aS-CEND
- working group on lattices (http://perso.ens-lyon.fr/damien.stehle/LATTICE_MEETINGS.html), joint with ENS Lyon
- BibTeX database of papers related to Cryptography, open and widely used by the community (<https://cryptobib.di.ens.fr>)

8.1.1.2. Steering Committees of International Conferences

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

8.1.1.3. Other Steering Committees

- steering committee of the Coding and Cryptography working group (GT-C2 - <https://crypto.di.ens.fr/c2:main>) of the *Groupe de Recherche Informatique Mathématique* (GDR-IM): Damien Vergnaud is the Head of this steering committee

8.1.1.4. Board of International Organisations

- Board of the *International Association for Cryptologic Research* (IACR): Michel Abdalla (2013 – 2018)

8.1.2. Scientific Events Selection

8.1.2.1. Program Committee Member

- CT-RSA '17 – 14-17 February (San Francisco, California, USA): David Pointcheval
- TCC '17 – 12-15 November (Baltimore, Maryland, USA): Hoeteck Wee
- ICALP '17 – 10-14 July (Warsaw, Poland): Hoeteck Wee
- Euro S&P '17 – 26-28 Apr (Paris, France) : Hoeteck Wee
- PKC '17 – 28-31 March (Amsterdam, Netherlands): Hoeteck Wee, Georg Fuchsbauer
- ASIACRYPT '17 – 3-7 December (Hong Kong): Georg Fuchsbauer
- ACNS '17 – 10-12 July (Kanazawa, Japan): Georg Fuchsbauer
- Indocrypt '17 – 10-13 Dec (Chennai, India): Georg Fuchsbauer
- Africacrypt '17 – 24-26 May (Dakar, Senegal): Georg Fuchsbauer

8.1.3. Editorial Boards of Journals

Editor-in-Chief

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

Associate Editor

- of *IET Information Security*: Michel Abdalla
- of *ETRI Journal*: Michel Abdalla
- of *Applicable Algebra in Engineering, Communication and Computing*: David Pointcheval
- of *Journal of Cryptographic Engineering*: Damien Vergnaud

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

- Master: David Pointcheval, Jacques Stern, Damien Vergnaud, Introduction to Cryptology, M1, ENS
- Master: Michel Abdalla, David Pointcheval, Cryptography, M2, MPRI
- Master: Damien Vergnaud, Advanced Algebra and Applications to Cryptography, Ecole Centrale Paris
- Master: David Pointcheval, Cryptography, M2, ESIEA
- Bachelor: Georg Fuchsbauer, Cryptologie, 3e année, ESGI

8.2.2. Defenses

- PhD: Thierry Mefenza Nountu, Pseudo-Random Generators and Pseudo-Random Functions : Cryptanalysis and Complexity Measures, ENS, November 28th, 2017 (Supervisor: Damien Vergnaud)
- PhD: Geoffroy Couteau, Zero-Knowledge Proofs for Secure Computation, ENS, November 30th, 2017 (Supervisor: David Pointcheval & Hoeteck Wee)
- PhD: Pierrick Méaux, Hybrid Fully Homomorphic Framework, ENS, December 8th, 2017 (Supervisor: Vadim Lyubashevsky & David Pointcheval)
- HdR: Céline Chevalier, UC-Secure Protocols using Smooth Projective Hash Functions, ENS, December 11th, 2017 (Supervisor: David Pointcheval)
- PhD: Florian Bourse, Functional Encryption for Inner-Product Evaluations, ENS, December 13th, 2017 (Supervisors: Michel Abdalla & David Pointcheval)

8.2.3. Supervision

- PhD in progress: Raphael Bost, Symmetric Searchable Encryption, from 2014, David Pointcheval (with Pierre-Alain Fouque, at Rennes)
- PhD in progress: Rafael Del Pino, Lattice-Based Cryptography – Complexity and Ideal-Lattices, from 2014, Vadim Lyubashevsky
- PhD in progress: Aurélien Dupin, Multi-Party Computations, from 2015, David Pointcheval (with Christophe Bidan, at Rennes)
- PhD in progress: Pierre-Alain Dupont, Secure Communications, from 2015, David Pointcheval
- PhD in progress: Romain Gay, Functional Encryption, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Dahmun Goudarzi, Secure and Fast Cryptographic Implementation for Embedded Devices, from 2015, Damien Vergnaud
- PhD in progress: Louiza Khati, Disk Encryption Modes, from 2015, Damien Vergnaud
- PhD in progress: Michele Minelli, Increased efficiency and functionality through lattice-based cryptography, from 2015, Michel Abdalla & Hoeteck Wee
- PhD in progress: Anca Nitulescu, Verifiable Outsourced Computations, from 2015, David Pointcheval
- PhD in progress: Razvan Rosie, Practical Functional Encryption Schemes For the Cloud, from 2015, Michel Abdalla & Hoeteck Wee

- PhD in progress: Quentin Santos, Advanced Cryptography from a Blockchain, from 2015, David Pointcheval
- PhD in progress: Jérémy Chotard, Attribute-Based Encryption, from 2016, David Pointcheval (with Duong Hieu Phan, at Limoges)
- PhD in progress: Michele Orrù, Functional Encryption, from 2016, Hoeteck Wee & Georg Fuchs-bauer
- PhD in progress: Balthazar Bauer, Transferable e-Cash, from 2017, Georg Fuchsbauer
- PhD in progress: Chloé Héban, Big Data and Privacy, from 2017, David Pointcheval (with Duong Hieu Phan, at Limoges)
- PhD in progress: Mélissa Rossi, Post-Quantum Cryptography, from 2017, Michel Abdalla (with Henri Gilbert at ANSSI and Thomas Prest at Thales)

8.2.4. Committees

- PhD Afonso Delerue Arriaga. *Private Functional Encryption* – Luxembourg University - Luxembourg – January 17th, 2017: Michel Abdalla (Examiner)
- HdR Maria Naya-Plasencia. *Symmetric Cryptography for Long- Term Security* – Université Paris VI – France – May 5th, 2017: David Pointcheval (Reviewer)
- PhD Benjamin Richard. *Study of 3-Party Authentication and Key-Derivation Protocols* – Université Rennes 1 - France – August 30th, 2017: Michel Abdalla (Reviewer)
- PhD Thierry Mefenza Nountu. *Pseudo-Random Generators and Pseudo-Random Functions: Cryptanalysis and Complexity Measures* – ENS - France – November 28th, 2017: Damien Vergnaud (Supervisor)
- PhD Geoffroy Couteau. *Zero-Knowledge Proofs for Secure Computation* – ENS - France – November 30th, 2017: David Pointcheval & Hoeteck Wee (Supervisors)
- PhD Britta Hale. *Low-Latency Key Exchange and Secure Channels* – NTNU - Norway – December 5th, 2017: Michel Abdalla (Reviewer)
- PhD Pierrick Méaux. *Hybrid Fully Homomorphic Framework* – ENS - France – December 8th, 2017: David Pointcheval (Supervisor)
- HdR Céline Chevalier. *UC-Secure Protocols using Smooth Projective Hash Functions* – ENS - France – December 11th, 2017: David Pointcheval
- PhD Florian Bourse. *Functional Encryption for Inner-Product Evaluations* – ENS - France – December 13th, 2017: Michel Abdalla & David Pointcheval (Supervisors)

GALLIUM Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Selection

10.1.1.1. Member of the Conference Program Committees

Xavier Leroy participated in the program committee of the ACM symposium on Principles of Programming Languages (POPL 2018), of the European Symposium on Programming (ESOP 2018), and of the second Principles of Secure Compilation workshop (PRISC 2018).

Jean-Marie Madiot was a member of the program committee of the Interaction and Concurrency Experience Workshop (ICE 2017).

Michel Mauny was a member of the program committee for Trends in Functional Programming in Education (TFPIE 2017).

François Pottier was program chair of the ACM SIGPLAN Workshop on Higher-Order Programming with Effects (HOPE 2017) and a member of the program committee of the Journées Françaises des Langues Applicatifs (JFLA 2018).

Mike Rainey was a member of the program committee for the IEEE International Parallel and Distributed Processing Symposium (IPDPS 2018).

Didier Rémy was a member of the program committee of the International Symposium on Functional and Logic Programming (FLOPS 2018).

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

Xavier Leroy is area editor (programming languages) for Journal of the ACM. He is a member of the editorial board of Journal of Automated Reasoning. Until June 2017, he was on the editorial board for the Research Highlights column of Communications of the ACM.

Michel Mauny is a member of the steering committee of the OCaml workshop.

François Pottier is a member of the ICFP steering committee and a member of the editorial boards of the Journal of Functional Programming and the Proceedings of the ACM on Programming Languages.

Didier Rémy is a member of the steering committee of the ML Family workshop.

10.1.3. Research Administration

Until September 2017, Xavier Leroy was an appointed member of Inria's *Commission d'Évaluation*. He participated in the following Inria hiring committees: *jury d'admissibilité DR2* and *jury d'admissibilité CR1*.

François Pottier is a member of Inria Paris' *Commission de Développement Technologique* and the president of Inria Paris' *Comité de Suivi Doctoral*.

Didier Rémy is *Deputy Scientific Director* (ADS) in charge of *Algorithmics, Programming, Software and Architecture*.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Didier Rémy is Inria's delegate in the pedagogical team of the MPRI (*Master Parisien de Recherche en Informatique*).

Master: Luc Maranget, "Semantics, languages and algorithms for multi-core programming", 18 HETD, M2 (MPRI), Université Paris Diderot, France.

Master: Michel Mauny, "Principles of Programming Languages", 32 HETD, M1, ENSTA-ParisTech, France.

Master: François Pottier and Didier Rémy, "Functional programming and type systems", 18 + 18 HETD, M2 (MPRI), Université Paris Diderot, France.

Licence: Armaël Guéneau, "Initiation à la programmation" (TP), "Projet informatique" (TP), "Concepts informatiques" (TD), "Langages et automates" (TD), 64 HETD, L1 and L2, Université Paris Diderot, France.

Licence: Thomas Williams, "Projet informatique" (TD), "Programation orientée objet et interfaces graphiques" (TD/TP), 64 HETD, L2, Université Paris Diderot, France.

10.2.2. Supervision

M1: Danny Willems, Université de Mons, supervised by François Pottier.

PhD in progress: Vitalii Aksenov, "Parallel Dynamic Algorithms", Université Paris Diderot, since September 2015, supervised by Umut Acar (co-advised with Anatoly Shalyto, ITMO University of Saint Petersburg, Russia).

PhD in progress: Pierrick Couderc (ENSTA-ParisTech & OCamlPro), "Typage modulaire du langage intermédiaire du compilateur OCaml," Université Paris-Saclay, since December 2014, supervised by Michel Mauny, Grégoire Henry (OCamlPro) and Fabrice Le Fessant.

PhD in progress: Albin Coquereau (ENSTA-ParisTech), "Amélioration de performances pour le solveur SMT Alt-Ergo: conception d'outils d'analyse, optimisations et structures de données efficaces pour OCaml," Université Paris-Saclay, since October 2015, supervised by Michel Mauny, Sylvain Conchon (LRI, Université Paris-Sud) and Fabrice Le Fessant.

PhD in progress: Armaël Guéneau, "Towards Machine-Checked Time Complexity Analyses", Université Paris Diderot, since September 2016, supervised by Arthur Charguéraud and François Pottier.

PhD in progress: Naomi Testard, "Reasoning about Effect Handlers and Cooperative Concurrency", Université Paris Diderot, since January 2017, supervised by François Pottier.

PhD in progress: Thomas Williams, "Putting Ornaments into practice", Université Paris Diderot, since September 2014, supervised by Didier Rémy.

10.2.3. Juries

Xavier Leroy was on the Ph.D. committees of Quentin Carbonneaux (Yale University, August 2017) and of Gabriel Radanne (University Paris Diderot, November 2017).

François Pottier was a reviewer for the Ph.D. thesis of Sandro Stucki (École Polytechnique Fédérale de Lausanne, September 2017). He was a member of the jury for the GDR GPL dissertation award (*prix de thèse du GDR GPL*).

10.3. Popularization

Xavier Leroy wrote a popularization article describing the hunt for a hardware bug in Intel processors, which was published by the Web news site *The Next Web* [32].

PARKAS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Albert Cohen was the General Chair of PLDI 2017.

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Timothy Bourke was a member of the PC of EMSOFT 2017.
- Timothy Bourke was a member of the PC of the Modelica Conference 2017.
- Timothy Bourke was a member of the PC of SCOPES 2017.
- Timothy Bourke was a member of the Student Research Competition panel of PLDI 2017.
- Francesco Zappa Nardelli was a member of the PC of POPL 2017.
- Francesco Zappa Nardelli was a member of the PC of ECOOP 2017.
- Marc Pouzet was a member of the PC of SCOPES 2017, EOOLT 2017, FADL 2017.
- Albert Cohen was a PC member of CGO 2018, Supercomputing 2017, PACT 2017.
- Albert Cohen was the area co-chair for programming models at IPDPS 2018.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

- Albert Cohen is associate editor of the ACM Transactions on Architecture and Code Optimization

9.1.3.2. Reviewer - Reviewing Activities

- Timothy Bourke was a reviewer for the Springer Real-Time Systems Journal.
- Timothy Bourke was a reviewer for IEEE Transactions on Software Engineering.

9.1.4. Invited Talks

- Timothy Bourke was invited to talk about the seL4 project at the Forum Méthodes Formelles: “Méthodes formelles et cyber-sécurité” in Toulouse in January 2017.
- Timothy Bourke was invited to speak on the “Verified Compilation of Lustre” at the University of Birmingham in March 2017.
- Francesco Zappa Nardelli is an invited speaker at the Entropy Workshop, January 2018.
- Francesco Zappa Nardelli was an invited speaker at Dagstuhl Seminar 17502 “Testing and Verification of Compilers”, December 2017.
- Francesco Zappa Nardelli was an invited speaker at the ETH Workshop on Software Correctness and Reliability, October 2017.
- Marc Pouzet was an invited speaker of the GT OVSTR Digicosme (CEA - Telecom Paris), in April 2017; the GDR Glace (part of GPL), in June 2017.

9.1.5. Leadership within the Scientific Community

Albert Cohen is a steering committee member of the PLDI, PPoPP and Compiler Construction conferences.

9.1.6. Scientific Expertise

Albert Cohen has been a visiting scientist at Facebook Artificial Intelligence Research.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: F. Zappa Nardelli: "A Programmer's introduction to Computer Architectures and Operating Systems" (M1), 45h, École Polytechnique, France

Master: A. Cohen & F. Zappa Nardelli, "Semantics, languages and algorithms for multicore programming", Lecture, 12h+9h, M2, MPRI: Ecole normale supérieure and Université Paris Diderot, France

Licence: F. Zappa Nardelli: "Concurrent Programming" (L3), PCs, 32h, École Polytechnique, France

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

Master: M. Pouzet : "Synchronous reactive Languages" (M2), Lectures. Master Comasic (Polytechnique), France.

Master: T. Bourke participated in reviewing the M1 internships of students at the ENS, France.

Licence : M. Pouzet & T. Bourke: "Operating Systems" (L3), Lectures and TDs, ENS, France.

Licence : T. Bourke, "Digital Systems" (L3), Lectures and TDs, ENS, France

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

9.2.2. Supervision

- PhD : Guillaume Baudart, 3rd year, supervised by T. Bourke and M. Pouzet. This thesis was defended in March 2017.
- PhD in progress : Ulysse Beaunon, 3rd year, supervised by A. Cohen and M. Pouzet.
- PhD in progress : Léo Brun, 2nd year, supervised by T. Bourke and M. Pouzet.
- PhD : Robin Morisset, 3rd year, supervised by F. Zappa Nardelli. This thesis was defended in April 2017.
- PhD in progress : Chandan Reddy, 3rd year, supervised by A. Cohen.
- PhD in progress : Jie Zhao, 3rd year, supervised by A. Cohen.

9.2.3. Juries

Francesco Zappa Nardelli was jury member of the PhD thesis of Yannick Zakowski, ENS Rennes, Dec 2017.

Francesco Zappa Nardelli will be jury member of the PhD thesis of Francois Ginraud, Grenoble, Jan 2018.

PL.R2 Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

Pierre-Louis Curien is organising a Day of Hommage to the memory of Maurice Nivat on February 6, 2018, at University Paris 7.

8.1.1.2. Member of the Organising Committees

Yann Régis-Gianas was multimedia chair of the organising committee of POPL 2017 that took place in Paris in January 2017.

Yves Guiraud, Philippe Malbos and Samuel Mimram have organised the third edition of the Higher-Dimensional Rewriting and Algebra (HDRA) workshop of the Formal Structures for Computation and Deduction conference (FSCD), held in Oxford in September 2017.

Yves Guiraud and Samuel Mimram, with Dimitri Ara (Univ. Aix-Marseille) have organised the “Categories in Homotopy and Rewriting” one-week international conference, at the CIRM, in Marseille, in September 2017. As the closing conference of the Cathre ANR project, focused on higher-dimensional algebra, this conference attracted 80 participants, working in category theory, algebraic topology, logic and theoretical computer science.

Matthieu Sozeau co-organised with Nicolas Tabareau the 3rd Coq Implementors Workshop in Le Croisic, France, June 12-16 2017. It included presentations from developers, both from France and abroad and a large amount of hacking.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

Hugo Herbelin was a member of the program committees of the conference FSCD’17, of the TYPES’17 venue, as well as of the PxTP’17 and CoqPL’18 workshops.

Matthieu Sozeau was member of the program committee of CoqPL’17.

Yann Régis-Gianas was member of the program committee of JFLA’18.

Alexis Saurin was a member of the program committee of the workshop Coinduction in Type Theory which took place in Chambéry from the 3rd to the 6th of July, 2017

Alexis Saurin was a member of the program committee of the workshop on Trends in Linear Logic and Applications which took place in Oxford on the 3rd of September 2017 as a satellite event of FSCD conference.

8.1.2.2. Member of the Conference Steering Committees

Hugo Herbelin was a member of the steering committee of the conference *Formal Structures for Computation and Deduction* (FSCD) until September 2017.

Hugo Herbelin is a member of the steering committee of the conference *TYPES*.

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

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

8.1.3. *Journal*

8.1.3.1. *Member of the Editorial Boards*

Pierre-Louis Curien is editor in chief of the Cambridge University Press journal Mathematical Structures in Computer Science (since January 2016).

Alexis Saurin is editing a special issue of MSCS dedicated to contributions in honour of Dale Miller for his 60th birthday.

8.1.3.2. *Reviewer - Reviewing Activities*

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

8.1.4. *Invited Talks*

Pierre-Louis Curien gave an invited talk at the Conference Categories for Homotopy Theory and Rewriting on “A syntactic approach to polynomial functors, polynomial monads and opetopes” (September 2017).

Yann Régis-Gianas gave an invited talk at the Conference for Trends in Functional Programming In Education on the OCaml MOOC (April 2017).

8.1.5. *Scientific Expertise*

Pierre-Louis Curien and Yves Guiraud have been members of the “Comité de sélection” for an assistant professor position in mathematical foundations of computer science at the University Paris 7 (spring 2017).

8.1.6. *Research Administration*

Pierre-Louis Curien, Hugo Herbelin and Yves Guiraud are members of the scientific council of the Computer Science department of University Paris 7.

Yves Guiraud is the head of the “Preuves, Programmes and Systèmes (PPS)” pole of the IRIF laboratory (since April 2016), a member of the IRIF council (January 2016 - December 2017), and of the IRIF direction council (since September 2017).

Pierre-Louis Curien is a member of the Scientific Council of the CIRM (Centre International de Rencontres Mathématiques).

8.1.7. *Presentation of papers*

Hugo Herbelin gave a talk at the GT Geocal-Lac on a proof of Gödel’s completeness theorem using side-effects.

Hugo Herbelin gave a talk at the PPS pole days on the intuitionistic reverse mathematics properties of Gödel’s completeness theorem.

Étienne Miquey gave a talk at the ESOP conference in Uppsala (Sweden) on “A classical sequent calculus with dependent types” (April 2017).

Jovana Obradović gave a talk at the Conference Topology in Ecuador (Galapagos Islands) on “Categorified cyclic operads” (August 2017).

Théo Zimmermann gave a talk on Coq’s Prolog and application to defining semi-automatic tactics at the TTT’17 workshop (Type-Theory Based Tools).

Cyprien Mangin gave a talk on Equations at the TTT’17 workshop.

Matthieu Sozeau gave a talk on Coq 8.6 at the CoqPL’17 workshop in January 2017.

8.1.8. *Talks in seminars*

Pierre-Louis Curien gave talks at NII (Hasuo’s Lab, Tokyo) and at Shanghai Jiaotong University on “Triangular structures on faces of some families of polytopes” (October-November 2017).

Théo Zimmermann gave a talk on transfer of isomorphisms at the Deducteam seminar (April 2017).

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

Hugo Herbelin attended TTT'17, TYPES'17 and FSCD'17.

Cyrille Chenavier, Maxime Lucas, Philippe Malbos and Samuel Mimram attended the HDRA workshop in Oxford (September 2017).

Cyrille Chenavier, Pierre-Louis Curien, Yves Guiraud, Maxime Lucas, Philippe Malbos and Samuel Mimram attended the "Categories in Homotopy and Rewriting" conference in Marseille (September 2017).

Hugo Herbelin attended the conferences Types 2017 in Budapest (Hungary, May), the Coq implementors workshop in Le Croisic (June), the FSCD conference in Oxford (UK, September). He attended various workshops of the POPL'17 and FSCD'17 conference, including TTT'17 and CoqPL'17. He participated to the Big Proofs seminar in Cambridge (July).

Jean-Jacques Lévy participated to CAV and VSTTE 2017 conferences, Heidelberg, Germany, July 21-28 where his co-author Ran Chen presented the article [36].

Matthieu Sozeau attended POPL'17, CPP'17 and CoqPL'17 in Paris (January), TYPES'17 in Budapest (Hungary, May) and the Coq implementors workshop in Le Croisic (June).

Étienne Miquey attended the conference ESOP in Uppsala (Sweden) in April 2017.

Pierre-Louis Curien and Jovana Obradović attended the conference Topology in Ecuador (Galapagos Islands) in August 2017, and the conference Geometry and combinatorics of associativity in Dublin in October 2017.

Pierre-Louis Curien and Claudia Faggian attended the CRECOGI meeting in Ito (Japan), and Claudia Faggian gave a talk on "Proof techniques in Probabilistic Reduction Systems" (November 2017).

Théo Zimmermann attended the TTT'17 workshop (January 2017) and the Coq implementors workshop in Le Croisic (June 2017).

8.1.10. Groupe de travail Théorie des types et réalisabilité

This is one of the working groups of PPS, jointly organised by Hugo Herbelin and Matthieu Sozeau.

The speakers in 2017 were Pierre-Marie Pédro, Guilhem Jaber, Francesco A. Genco, Ludovic Patey.

8.1.11. Groupe de travail Catégories supérieures, polygraphes et homotopie

Several members of the team participate actively in this weekly working group of PPS, organised by François Métayer (IRIF) since 2009.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

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

Master: Hugo Herbelin teaches the course on the proof-as-program correspondence for classical logic and beyond at the LMFI.

Master: Pierre Letouzey teaches two short courses to the LMFI Master 2 students : "Models of programming" and "Introduction to computed-aided formal proofs". These two courses come in addition to Pierre Letouzey's regular duty as teacher in the Computer Science department of Paris 7 (including a course on Compilation to M2-Pro students).

Master: Yves Guiraud gave a course on the applications of rewriting methods in algebra in the M2 Mathématiques Fondamentales of Lyon (Univ. Lyon 1 and ENS Lyon).

Master: Matthieu Sozeau taught the MPRI course on Advanced uses of proof assistants (12 hours + a project), together with Bruno Barras (Inria Deducteam).

Matthieu Sozeau taught a course at the EJCP'17 summer school in Toulous in June 17, on an introduction to interactive theorem proving.

Master: Alexis aurin taught the proof theory and lambda-calculus part of the cours fondamental de logique in M2 “Logique Mathématique et Fondements de l’Informatique”, Université Paris 7.

Alexis Saurin chairs LMFI M2 since September 2013.

8.2.2. Supervision

Internship: Hugo Herbelin has supervised the M2 internship of Charlotte Barot.

Internship: Yann Régis-Gianas has supervised the L3 internship of Kostia Chardonnet.

Internship: Yann Régis-Gianas has supervised the M2 internship of Colin Gonzalez.

PhD (completed) Amina Doumane, supervised by Alexis Saurin, David Baelde and Pierre-Louis Curien, successfully defended in June 2017 (title: On the infinitary proof theory of logics with fixed points).

PhD (completed): Étienne Miquey, co-supervised by Hugo Herbelin and Alexandre Miquel, *Réalisabilité classique et effets de bords*, September 2014, successfully defended in November 2017.

PhD (completed): Jovana Obradović, supervised by Pierre-Louis Curien, successfully defended in September 2017 (title: Cyclic operads: syntactic, algebraic and categorified aspects).

PhD (completed): Maxime Lucas, supervised by Yves Guiraud and Pierre-Louis Curien, successfully defended in December 2017 (title: Cubical categories for homotopy and rewriting).

PhD in progress: Guillaume Claret, *Programmation avec effets en Coq*, (started in September 2012), supervised by Hugo Herbelin and Yann Régis-Gianas, the dissertation was completed in 2015 but Guillaume Claret moved in the meantime to a private company and the defense has been delayed to 2018.

PhD in progress: Thibaut Girka, *Differential semantics* (started in January 2014), supervised by Roberto Di Cosmo and Yann Régis-Gianas.

PhD in progress: Cyprien Mangin, *Dependent Pattern-Matching, induction-induction and higher inductive types* (started in September 2015), supervised by Matthieu Sozeau and Bruno Barras

PhD in progress: Théo Zimmermann (started in September 2016), supervised by Hugo Herbelin.

PhD starting: Cédric Ho Thanh, *on Opetopes for higher-dimensional rewriting and koszulity*, supervised by Pierre-Louis Curien and Samuel Mimram.

The following are cosupervisions of PhD students who are not formally part of the team:

PhD in progress: Rémi Nollet, *Functional reactive programming and temporal logics: their syntax and semantics - from discrete to continuous time* (started in September 2016), supervised by Alexis Saurin and Christine Tasson.

PhD in progress: Gaëtan Gilbert (at Inria Nantes), *Definitional proof-irrelevance in the Calculus of Inductive Constructions* (started in September 2016), supervised by Nicolas Tabareau and Matthieu Sozeau.

PhD in progress: Simon Forest (at École Polytechnique), *Rewriting in semistrict higher categories* (started in September 2017), supervised by Samuel Mimram and Yves Guiraud.

PhD in progress: Théo Winterhalter (at Inria Nantes), *Extensional to Intensional type theory and meta-theory of proof-irrelevance* (started in September 2017), supervised by Nicolas Tabareau and Matthieu Sozeau.

8.2.3. Juries

Pierre-Louis Curien was referee for the Habilitation of Russ Harmer (ENS Lyon, May 2017).

Pierre-Louis Curien and Alexis Saurin were members of the jury of the thesis of Amina Doumane (Paris 7, June 2017).

Pierre-Louis Curien was president of the jury of the Habilitation of Matthieu Picantin (Paris 7, July 2017).

Pierre-Louis Curien was president of the jury of the thesis of Simon Castellan (ENS Lyon, July 2017).

Pierre-Louis Curien was member of the jury of the thesis of Jovana Obradović (Paris 7, September 2017).

Pierre-Louis Curien was referee for the Habilitation of Paul-André Melliès (Paris 7, November 2017).

Pierre-Louis Curien was president of the jury of Habilitation of Damiano Mazza (Paris 13, December 2017).

Pierre-Louis Curien was referee for the Habilitation of Samuele Giraudo (Marne la Vallée, December 2017).

Pierre-Louis Curien was member of the jury of the thesis of Nicolas Ninin (Paris Saclay, December 2017).

Pierre-Louis Curien was president of the jury of the thesis of Luc Pellissier (Paris 13, December 2017).

Pierre-Louis Curien was referee for the thesis of Christopher Nguyen (Macquarie University, Sydney, December 2017).

Pierre-Louis Curien and Yves Guiraud were members of the jury of the thesis of Maxime Lucas (Paris 7, December 2017).

8.3. Popularization

Hugo Herbelin wrote with Sandrine Blazy and Pierre Castéran an introduction to Coq for engineers edited by Techniques de l'Ingénieur.

POLSYS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Emmanuel Prouff was a member of the organization committee of Eurocrypt 2017 (Paris, France, 2017, April 30 - May 4).

Jean-Charles Faugère and Ludovic Perret were members of the organization committee of the Quantum-Safe Cryptography for Industry (Paris, France, 2017, April 30).

9.1.2. Scientific Events Selection

9.1.2.1. Chair of Conference Program Committees

Mohab Safey El Din was PC Chair of the International Symposium on Symbolic and Algebraic Computation (ISSAC), Kaiserslautern, Germany, 2017.

Jean-Charles Faugère was PC co-Chair of the International workshop on Parallel Symbolic Computation (PASCO), Kaiserslautern, Germany, 2017.

9.1.2.2. Member of the Conference Program Committees

Ludovic Perret was a member of the program-committee of

- 20th IACR International Conference on Practice and Theory of Public-Key Cryptography (PKC'17), Amsterdam, 28-31 March 2017

Emmanuel Prouff was a member of the steering committees of the following conferences

- Conference on Cryptographic Hardware and Embedded Systems 2017 (CHES 2017) (Taipei, Taiwan, 2017, Sept. 25-28);
- Smart Card Research and Advanced Application Conference (CARDIS 2017) (Lugano, Switzerland, 2017, Nov. 13-17).

Guénaél Renault was a member of the program committee of

- 7th Int'l Conference on Mathematical Aspects of Computer and Information Sciences (MACIS) 2017;

Elias Tsigaridas was a member of the program committees of the following conferences

- 7th Int'l Conference on Mathematical Aspects of Computer and Information Sciences (MACIS) 2017;
- 19th International Workshop on Computer Algebra in Scientific Computing (CASC) 2017.

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

- 11th International Workshop on Automated Deduction in Geometry (ADG 2016) (Strasbourg, France, June 27-29, 2016);
- 8th International Symposium on Symbolic Computation in Software Science (SCSS 2017) (Garmarh, Tunisia, 2017, April 6-9).

Dongming Wang was a member of the steering committees of the following conferences

- International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS),
- International Symposium on Symbolic Computation in Software Science (SCSS).

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Ludovic Perret is an Associate Editor for:

- Designs, Codes and Cryptography (Springer, Berlin).
- The Computer Journal (Oxford University Press)
- Groups, Complexity, Cryptology (De Gruyter)

Emmanuel Prouff is an Associate Editor of the Journal of Cryptographic Engineering (Springer, Berlin).

Mohab Safey El Din is an Associate Editor of the Journal of Symbolic Computation.

Dongming Wang has the following editorial activities:

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

9.1.4. Invited Talks

Jean-Charles Faugère was a plenary invited speaker at the

- SIAM Conference on Applied Algebraic Geometry, Atlanta (August 2017).

Ludovic Perret was invited speaker at the

- HEXATRUST Summer school 2017 (Paris, September 2017)

Emmanuel Prouff was invited speaker at the

- Journées du GDR-IM (Montpellier, France, 2017, Mar. 14-16).
- Aix-Marseille Cyber Security Forum (AMUSEC) (Marseille, France, 2017, Oct. 12-13).

Guénaél Renault was invited speaker at the

- Third French-Japanese Meeting on Cybersecurity (Tokyo, Japan, April 2017)

Mohab Safey El Din was invited speaker at:

- The mini-symposium on Euclidean Distance Degree at the 2017 SIAM Conference on Applied Algebraic Geometry, Atlanta, USA 2017;
- The math. seminar of the University of Dortmund, Germany;
- The Berlin-Leipzig Seminar on Algebra, Geometry and Combinatorics, Germany;
- The mini-symposium on Numeric and Symbolic Convex Programming for Polynomial Optimization, at the PGMO days, Saclay, France.

Dongming Wang invited speaker at the

- 7th International Conference on Mathematical Aspects of Computer and Information Sciences (Vienna, Austria, 2017, Nov. 15-17).
- 19th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (Timisoara, Romania, 2017, Sept. 21-24).
- 5th Summer School in Symbolic Computation (Nanning, China, 2017, July 16-22).

9.1.5. Scientific Expertise

Mohab Safey El Din was evaluator for the FWF International Program (Austrian funding agency).

Jean-Charles Faugère was the head of the hiring Committee for an associate professor in Grenoble.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Jérémy Berthomieu had the following teaching activities:

Master : Computation Modeling, 35 hours, M1, Université Pierre-et-Marie-Curie, France.

Master : In charge of Basics of Algebraic Algorithms, 73 hours, M1, Université Pierre-et-Marie-Curie & Polytech' UPMC, France.

Master : Introduction to Security, 20 hours, M1, Université Pierre-et-Marie-Curie, France.

Master : Projects supervision, 8 hours, M1, Université Pierre-et-Marie-Curie, France.

Licence : Introduction to Algorithmics, 40,5 hours, L2, Université Pierre-et-Marie-Curie, France.

Licence : Representations and Numerical Methods, 38,5 hours, L2, Université Pierre-et-Marie-Curie, France.

Licence : Projects supervision, 10 hours, L2, Université Pierre-et-Marie-Curie, France.

Jean-Charles Faugère had the following teaching activities:

Master: Fundamental Algorithms in Real Algebraic Geometry, 13,5 hours, M2, ENS de Lyon, France.

Master : Polynomial Systems solving, 12 hours, M2, MPRI, France.

Ludovic Perret is teaching a full service (192 hours), balanced between master and licence in cryptography, complexity and introduction to algorithms.

Mohab Safey El Din had the following teaching activities:

Master : In charge of Modeling and problems numerical and symbolic solving through MAPLE and MATLAB software, 36 hours, M1, Université Pierre-et-Marie-Curie, France

Master : In charge of Introduction to polynomial system solving, 48 hours, M2, Université Pierre-et-Marie-Curie, France

Master : In charge of the Security, Reliability and Numerical Efficiency Program in Master, 40 hours, M1 and M2, Université Pierre-et-Marie-Curie, France

Licence : Introduction to Cryptology, 20 hours, L3, Université Pierre-et-Marie-Curie, France

9.2.2. Supervision

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

PhD in progress : Matías Bender, Algorithms for Sparse Gröbner basis and applications, started in Dec. 2015, Jean-Charles Faugère and Elias Tsigaridas.

PhD in progress : Eleonora Cagli, Analysis and interest points research in the attacks by observation context, Emmanuel Prouff.

PhD in progress : Loïc Masure, Recognition and Side Channel Analysis, Emmanuel Prouff.

PhD in progress, Olive Chakraborty, Design and Analysis of Post-Quantum Schemes, started in May 2017, Jean-Charles Faugère and Ludovic Perret.

PhD in progress, Nagardjun Chinthamani Dwarakanath, Design and Analysis of Fully Homomorphic Schemes, started in Dec. 2017, Jean-Charles Faugère and Ludovic Perret.

PhD in progress, Solane El Hirsch Design and Analysis of Post-Quantum Schemes, started in June 2017, Jean-Charles Faugère and Ludovic Perret.

PhD in progress, Xuan Vu. Algorithms for solving structured semi-algebraic systems, started in October 2017, Jean-Charles Faugère and Mohab Safey El Din.

9.2.3. Juries

Emmanuel Prouff was examiner in the PhD committee of N. Bruneau and M. Dugardin and in the HDR committees of J.-M. Dutertre and N. El Mrabet.

Guénaél Renault was referee in the Phd committee of T. Mefenza.

9.3. Popularization

The activity of POLSYS in post-quantum cryptography has been covered in several large audience magazines:

- “Enfin! La révolution quantique”, L’Usine Nouvelle, November 2017.
- “QUANTIQUE : THE NEXT BIG THING(K)”, L’Informaticien, November 2017.
- “L’ORDINATEUR QUANTIQUE VA-T-IL METTRE À MAL LA CYBERSÉCURITÉ MONDIALE?”, Bouygues Blog, October 2017.

Ludovic Perret is member of the Cloud Security Alliance (CSA) quantum-safe security working group. In particular, he contributed to the following documents:

- B. Huttner, J. Melia, G. Carter, L. Perret and L. Wilson. “**Applied Quantum-Safe Security**”, Feb. 2017.
- B. Huttner, J. Melia, G. Carter, L. Perret and L. Wilson. “**Quantum Safe Security Glossary**”, January 2017.

Ludovic Perret is also member of the quantum-safe cryptography specification group of the European Telecommunications Standards Institute (ETSI) where is the referee for a document on quantum-safe signatures.

Since May 2010, Daniel Lazard is engaged in a strong edition work on the English Wikipedia (more than 6 000 contributions, including vandalism revert and talk pages). Initially focused on the themes of POLSYS, these contributions were later enlarged to general algebra and algebraic geometry, because many elementary articles require to be expanded to be useful as a background for computer algebra. Examples of articles that have been subject of major editing: “System of polynomial equations” (created), “Computer algebra”, “Algebra”, “Algebraic geometry”, “Polynomial greatest common divisor”, “Polynomial factorization”, “Finite field”, “Hilbert series and Hilbert polynomial”,...

For the year 2017, this contribution amounts to about 2,000 edits on the English Wikipedia.

Mohab Safey El Din was invited by FMJH to present and popularize symbolic and algebraic computation to Master students in Mathematics following the curricula proposed by Univ. Paris-Saclay.

PROSECCO Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. General Chair, Scientific Chair

- Prosecco organized the 2nd IEEE European Symposium on Security and Privacy in Paris, 26-28 April 2017. Catalin Hritcu was General Chair, Bruno Blanchet was Finance Chair, and Karthikeyan Bhargavan was Local arrangements Chair.
- Harry Halpin co-chaired the IEEE Security and Privacy on the Blockchain workshop, colocated with IEEE EuroS&P, on 29 April 2017.
- Catalin Hritcu is Artifact Evaluation Co-Chair of POPL 2018
- Catalin Hritcu created a New Workshop on Principles of Secure Compilation (PriSC) colocated with POPL 2017 and 2018. He is PC Chair for PriSC 2018.
- Prosecco organized a Project Everest Workshop at Inria Paris, 2 October 2017
- Prosecco organized an ESOP PC workshop at Inria Paris, 15 December 2017 Workshop at POPL: 13 January 2018, Los Angeles, USA

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

- Bruno Blanchet was PC member at TAP 2017.
- Harry Halpin was a PC member for ISWC 2017 and WWW 2017.
- Catalin Hritcu was PC member at ESOP 2018 and EuroS&P 2018
- Karthikeyan Bhargavan was a PC member at ACM CCS 2017-18, IEEE S&P 2017-18, POST 2018.

9.1.2.2. Reviewer

- Harry Halpin served as a reviewer for LatinCrypt, AsiaCrypt, JAIST, TCS

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Associate Editor

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

9.1.4. Invited Talks

- Bruno Blanchet gave an invited talk at the workshop on Models and Tools for Security Analysis and Proofs, 2017.
- Bruno Blanchet gave an invited talk at the workshop TLS:DIV (TLS 1.3: Design, Implementation & Verification), 2017.
- Bruno Blanchet gave an invited talk at the workshop TMSP (Trends in Mechanized Security Proofs), 2017.
- Bruno Blanchet gave an invited talk at the Summer Research Institute, EPFL, 2017.
- Harry Halpin gave an invited talk at SPACE 2017
- Harry Halpin gave an invited talk at Conference on Privacy and Data Protection, January 2017.

- Harry Halpin gave an invited talk at RightsCon, March 2017.
- Harry Halpin gave an invited talk at E-CRYPT Cryptosymposium, March 2017.
- Harry Halpin gave an invited talk at La Firma Digital, July 2017.
- Harry Halpin gave an invited talk at Google, October 2017.
- Harry Halpin gave an invited talk at IMMWorld, November 2017.
- Harry Halpin gave an invited talk at Boston University Law School, November 2017.
- Harry Halpin gave an invited talk at University of North Carolina-Chapel Hill, December 2017.
- Harry Halpin gave a keynote talk at Security, and Privacy, and Cryptographic Engineering, December 2017.
- Catalin Hritcu was an invited speaker at TFP 2017
- Catalin Hritcu gave talks at Infoiasi, ESOP PC Workshop, Everest Workshop, TFP (Keynote), FADEx 2017, EuroS&P 2017, Université Clermont Auvergne, University Paris-Sud.
- Karthikeyan Bhargavan gave a keynote at ACNS 2017, Kanazawa, Japan.
- Karthikeyan Bhargavan gave an invited talk at Apple, Cupertino, USA.

9.1.5. Scientific Expertise

- Bruno Blanchet is a member of the specialized temporary scientific committee of ANSM (*Agence nationale de sécurité du médicament et des produits de santé*), on the cybersecurity of software medical devices.
- Karthikeyan Bhargavan advises the TLS working group at the IETF and consults for Mozilla, Apple, and Microsoft Research.
- Catalin Hritcu consults for Microsoft Research and the DARPA SSITH/HOPE grant.

9.1.6. Research Administration

- Bruno Blanchet is a member of the Inria hiring committee for PhD, post-docs, and *délégations* (*Commission des Emplois Scientifiques*, CES).

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

- Master: Catalin Hritcu, Cryptographic protocols: formal and computational proofs, 31.5h equivalent TD, master M2 MPRI, université Paris VII, France
- Doctorat: Catalin Hritcu: Verifying Cryptographic Implementations with F* at Computer-aided security proofs summer school. Aarhus, Denmark, October, 2017
- Doctorat: Catalin Hritcu: Verifying Cryptographic Implementations with F* course at Models and Tools for Cryptographic Proofs summer school, Nancy, France, July 2017
- Master: Karthikeyan Bhargavan, Cryptographic protocols: formal and computational proofs, 31.5h equivalent TD, master M2 MPRI, université Paris VII, France
- Master: Karthikeyan Bhargavan, Protocol Verification and Safety, 18h equivalent TD, master ACN, Ecole Polytechnique et Telecom ParisTech, France

9.2.2. Supervision

- PhD: Evmorfia-Iro Bartzia, *A formalization of elliptic curves for cryptography*, Université Paris-Saclay, February 2017. Co-supervised by Pierre-Yves Strub and Karthikeyan Bhargavan.
- PhD in progress: Kenji Maillard, *Semantic Foundations for F**, started January 2017, supervised by Catalin Hritcu and Karthikeyan Bhargavan

- PhD in progress: Jean Karim Zinzindohoue, *A Verified Cryptographic Library*, supervised by Karthikeyan Bhargavan
- PhD in progress: Nadim Kobeissi, 2015-, *Verified Web Security Applicaitons*, supervised by Karthikeyan Bhargavan
- PhD in progress: Benjamin Beurdouche, 2016-, *Verified Cryptographic Protocols for the Internet of Things*, supervised by Karthikeyan Bhargavan
- PhD in progress: Natalia Kulatova, 2017-, *Verified Hardware Security Devices*, co-supervised by Karthikeyan Bhargavan and Graham Steel
- PhD in progress: Marina Polybelova, 2017-, *Verified Cryptographic Web Applications*, supervised by Karthikeyan Bhargavan
- PhD in progress: Yaëlle Vincont, 2017-, *Software Security: combining fuzzing and symbolic execution for vulnerability detection*, co-supervised by Karthikeyan Bhargavan and Sebastien Bardin

9.2.3. Juries

- Bruno Blanchet was reviewer of Lucca Hirschi's PhD thesis.
- Harry Halpin served on the PhD jury of Evo Busseniers (Vrije Universitat Bruxelles)

9.3. Popularization

- Karthikeyan Bhargavan, Benjamin Beurdouche, Jean Karim Zinzindohoue published a paper in the Communications of the ACM.

SECRET Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- EuroS&P 2017: April 26-28, 2015, Paris (France): G. Leurent (poster chair);
- TQC 2017 (Theory of Quantum Computation, Communication and Cryptography): June 20-22, 2017, Paris (France): A. Chailloux, A. Leverrier.
- Dagstuhl Seminar 17401, "Quantum Cryptanalysis": October 1-6, 2017, Dagstuhl (Germany): N. Sendrier (co-organizer)
- Training School on Symmetric Cryptography and Blockchain: February 19-23, 2018, Torremolinos (Spain): A. Canteaut (co-organizer).

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

As a co-editor-in-chief of the journal *IACR Transactions on Symmetric Cryptology*, María Naya-Plasencia serves as a program chair of the conference *Fast Software Encryption (FSE)*, hold in Tokyo March 2017, and to be held in Bruges March 2018.

10.1.2.2. Member of the Conference Program Committees

- QIP 2017: January 16-20 2017, Seattle, USA (A. Chailloux, A. Leverrier);
- CT-RSA 2017: February 14-17, 2017, San Francisco, US (M. Naya-Plasencia);
- FSE 2017: March 5-8, 2017, Tokyo, Japan (A. Canteaut, G. Leurent, M. Naya-Plasencia);
- CryptoAction Symposium 2017: March 27-28, Amsterdam, the Netherlands (A. Canteaut);
- Financial Crypto 2017: April 3-7, 2017, Sliema, Malta (G. Leurent);
- Journées Codage et Cryptographie - C2 2017: April 23-28, La Bresse, France (G. Leurent);
- Eurocrypt 2017: 30 April- 4 May, 2017, Paris, France (M. Naya-Plasencia);
- Fq13: June 4-9, 2017, Gaeta, Italy (A. Canteaut);
- CEWQO 2017: June 26-30 2017, Lyngby, Denmark (A. Leverrier);
- PQCrypto 2017: 26-28 June, 2017, Utrecht, the Netherlands (M. Naya-Plasencia, N. Sendrier, J.P. Tillich)
- SAC 2017: August 16-18, 2017, Ottawa, Canada (G. Leurent, M. Naya-Plasencia);
- Crypto 2017: August 20-24, 2017, Santa Barbara, CA, USA (G. Leurent);
- AQIS 2017: September 4-8, 2017, Singapore (A. Chailloux);
- SCN 2018: September 5-7, 2018, Amalfi, Italy (G. Leurent);
- QCrypt 2017: 2017, September 18-22 2017, Cambridge, UK (A. Leverrier);
- WCC 2017: September 18-22, Saint-Petersburg, Russia (P. Charpin, J.-P. Tillich);
- FSE 2018: March 5-7, 2018, Bruges, Belgium (C. Boura, A. Canteaut, G. Leurent, M. Naya-Plasencia, L. Perrin);
- CryptoAction Symposium 2018: April 4-5, Sutomore, Montenegro (A. Canteaut);
- PQCrypto 2018: April 9-11, 2018, Fort Lauderdale, USA, (N. Sendrier, J.P. Tillich);

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- *Designs, Codes and Cryptography*, associate editor: P. Charpin.
- *Finite Fields and Applications*, associate editors: A. Canteaut, P. Charpin.
- *Applicable Algebra in Engineering, Communication and Computing*, associate editor: A. Canteaut.
- *IACR Transactions on Symmetric Cryptology*, associate editors: C. Boura, A. Canteaut, G. Leurent, L. Perrin, co-editor-in-chief: M. Naya-Plasencia.
- *Annals of telecommunications*, associate editor: J.P. Tillich.
- *Advances in Mathematics for Communications*, associated editor : J.P. Tillich

10.1.3.2. Editor for books or special issues

- Special Issue on Coding and Cryptography, *Designs, Codes and Cryptography* : P. Charpin, T. Johansson, G. Kyureghyan, N. Sendrier and J.-P. Tillich, Eds., Volume 82, Issue 1-2, January 2017

10.1.3.3. Reviewer - Reviewing Activities

- Reviewer for Mathematical Reviews: P. Charpin.
- Reviewer for ERC proposals: G. Leurent

10.1.4. Invited Talks

- A. Leverrier, *Security of continuous-variable quantum key distribution via a Gaussian de Finetti reduction*, Trustworthy Quantum Information TyQi 2017, Paris, France, 19-21 June 2017.
- A. Leverrier, *Challenges in continuous-variable quantum cryptography*, QCRYPT 2017, Cambridge, UK, 18-22 September 2017.
- N. Sendrier, *Quantum Safe Cryptography from Codes: Present and Future*, 16th IMA International Conference on Cryptography and Coding, Oxford, UK, December 13, 2017.

The members of the project-team have also been invited to give talks to some workshops or international seminars, including:

- A. Canteaut, *Proving Resistance against Invariant Attacks: Properties of the Linear Layer*, Early Symmetric Crypto - ESC 2017, Canach, Luxembourg, January 2017
- A. Canteaut, *Proving resistance of a block cipher against invariant attacks*, BFA 2017 - Boolean Functions and their Applications, Os, Norway, July 2017.
- A. Chailloux, *A tight security reduction in the quantum random oracle model for code-based signature schemes*, IRIF Algocomp seminar, Paris, France, November 2017
- G. Leurent, *On the Practical (In-)Security of 64-bit Block Ciphers*, Early Symmetric Crypto - ESC 2017, Canach, Luxembourg, January 2017
- G. Leurent, *Breaking Symmetric Cryptosystems Using Quantum Algorithms*, Frontiers of Quantum Safe Cryptography - FOQUS, April 2017, Paris, France.
- G. Leurent, *Bad Symmetric Crypto in the Real World*, Journées Nationales 2017 Pré-GDR Sécurité Informatique, Paris, France, May 2017.
- A. Leverrier, *A Gaussian de Finetti theorem and application to truncations of random Haar matrices*, Workshop on "Probabilistic techniques and Quantum Information Theory", IHP, Paris, France, 23-27 October 2017.
- A. Leverrier, *Efficient decoding of random errors for quantum expander codes*, Conference on "Quantum Information Theory", IHP, Paris, France, 11-15 December 2017.
- M. Naya-Plasencia, *New Results on Quantum Symmetric Cryptanalysis* Dagstuhl seminar "Quantum Cryptanalysis", Dagstuhl, Germany, October 2017.

- N. Sendrier, *Code-based Cryptography*, PQCRYPTO Summer School on Post-Quantum Cryptography 2017, TU Eindhoven, June 2017. 5 hours.
- N. Sendrier, *Code-based Cryptography*, Executive School on Post-Quantum Cryptography 2017, TU Eindhoven, June 2017. 1 1/2 hours.
- J.P. Tillich *Décodage de codes LDPC quantiques*, Journées C2 La Bresse, April 27, 2017.
- J.P. Tillich *Code based cryptography and quantum attacks*, Dagstuhl seminar "Quantum Cryptanalysis", Dagstuhl, Germany, October 2017.
- J.P. Tillich *Recent advances in decoding quantum LDPC codes*, Recent advances in Quantum Computing, CEA Saclay, December 13, 2017.

10.1.5. Leadership within the Scientific Community

- A. Canteaut serves as a chair of the steering committee of *Fast Software Encryption (FSE)*.
- A. Canteaut serves on the steering committee of the international competition CAESAR for authenticated encryption⁰.
- N. Sendrier serves on the steering committee of *Post-quantum cryptography (PQCrypto)*.
- N. Sendrier serves on the steering committee of the WCC conference series.
- N. Sendrier is a member of the "Comité de pilotage" of the ANR (défi 9).
- A. Leverrier serves on the steering committee of *DIM SIRTEQ* (réseau francilien pour les technologies quantiques).

10.1.6. Research Administration

- A. Canteaut serves as Head of Science of the Inria Paris research center since September 2017. She was deputy Head of Science from January to August 2017.
- A. Canteaut serves on the *Evaluation Committee* since September 2017.
- A. Canteaut was a member of the steering committee of the Fondation Sciences Mathématiques de Paris until June 2017.
- P. Charpin serves on the *Comité Parité* at Inria.
- M. Naya-Plasencia is a member of *Inria Paris CES Committee* (Comité de suivi doctoral).
- M. Naya-Plasencia is a member of *Inria Paris Scientific Hiring Committee* (Assignment of PhD, post-doctoral and delegation Inria fundings).
- M. Naya-Plasencia serves on the jury for PhD scholarships from EDITE.
- M. Naya-Plasencia serves on the *Comité des usagers du projet "rue Barrault"*.
- M. Naya-Plasencia serves on the *commission bureaux*.

10.1.7. Committees for the selection of professors, assistant professors and researchers

- Inria Paris Chargés de recherche: M. Naya-Plasencia
- Inria Directeurs de recherche: A. Canteaut
- Université Pierre-et-Marie-Curie, professor: A. Canteaut
- Université de Rouen, assistant professor: C. Boura, M. Naya-Plasencia
- Université de Limoges, assistant professor: C. Boura, M. Naya-Plasencia
- ENSEA, assistant Professor: M. Naya-Plasencia
- DTU Denmark, associate professor: A. Canteaut.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

⁰<https://competitions.cr.yp.to/caesar.html>

Master: A. Canteaut, *Error-correcting codes and applications to cryptology*, 12 hours, M2, University Paris-Diderot (MPRI), France;

Master: A. Canteaut, *Symmetric cryptography*, 6 hours M2, Ecole des Mines de Saint-Etienne, campus de Gardanne (ingénieurs Spécialité Microélectronique et Informatique), France, 2017.

Master: A. Chailloux, *Quantum Computing*, 9 hours, M2, University Paris-Diderot (MPRI), France;

Master: G. Leurent *Algorithmique et programmation*, 25 hours, M1, UVSQ, France;

Corps des Mines: G. Leurent *Cryptographie symétrique*, 9 hours, Telecom ParisTech, France;

Master: J.-P. Tillich, *Introduction to Information Theory*, 32 hours, M2, Ecole Polytechnique, France;

10.2.2. Supervision

HdR : María Naya Plasencia, *Symmetric Cryptography for Long-Term Security*, University Pierre-et-Marie-Curie, May 5, 2017.

HdR : Anthony Leverrier, *Protecting information in a quantum world: from cryptography to error correction*, University Pierre-et-Marie-Curie, September 27, 2017.

PhD : Julia Chaulet, *Study of public-key cryptosystems based on MDPC quasi-cyclic codes*, University Pierre-et-Marie-Curie, March 20, 2017.

PhD : Kaushik Chakraborty, *Cryptography with spacetime constraints*, Université Pierre-et-Marie Curie, October 12, 2017.

PhD : Adrien Hauteville, *Nouveaux protocoles et nouvelles attaques pour la cryptologie basée sur les codes en métrique rang*, University of Limoges, December 4, 2017.

PhD in progress: Rodolfo Canto Torres, *Analysis of generic decoding algorithms for the Hamming metric and study of cryptosystems based on the rank metric*, since September 2015, supervisor: N. Sendrier

PhD in progress: Sébastien Duval, *Constructions for lightweight cryptography*, since October 2015, supervisor: A. Canteaut and G. Leurent

PhD in progress: Yann Rotella, *Finite fields and symmetric cryptography*, since October 2015, supervisor: A. Canteaut

PhD in progress: Xavier Bonnetain, *Cryptanalysis of symmetric primitives in the post-quantum world*, since September 2016, supervisor: M. Naya Plasencia

PhD in progress: Thomas Debris, *Quantum algorithms for decoding linear codes*, since September 2016, supervisor: J.-P. Tillich

PhD in progress: Antoine Grospellier, *LDPC codes: constructions and decoding*, since October 2016, supervisor: J.-P. Tillich

PhD in progress: Vivien Londe, *Study of quantum LDPC codes*, since September 2016, supervisors: G. Zémor and A. Leverrier

PhD in progress: Kevin Carrier, *Reconstruction of error-correcting codes*, since October 2016, supervisor: N. Sendrier

PhD in progress: Matthieu Lequesne, *Attaques par canaux cachés sur les cryptosystèmes à base de codes MDPC quasi-cycliques*, since September 2017, supervisor: N. Sendrier

PhD in progress: Ferdinand Sibleyras, *Security of modes of operation*, since October 2017, supervisor: G. Leurent and A. Canteaut

PhD in progress: Valentin Vasseur, *Etude du décodage des codes QC-MDPC*, since October 2017, supervisor: N. Sendrier

PhD in progress: Rémi Bricout, *Etude de scénarios non-locaux quantiques à l'aide d'outils de la théorie de l'information quantique*, since September 2017, supervisor: A. Chailloux and A. Leverrier

PhD in progress: Shouvik Ghorai, *Beyond-QKD continuous-variable quantum cryptographic protocols*, since October 2017, supervisors: E. Diamanti (UPMC), A. Leverrier

PhD in progress: Andrea Olivo, *Partir de contraintes relativistes pour faire de la cryptographie quantique*, since November 2017, supervisors: A. Chailloux and F. Grosshans (laboratoire Aimé Cotton).

10.2.3. Juries

- C. Mavromati, *Cryptanalyse des algorithmes de type Even-Mansour*, University Paris-Saclay, January 24, 2017, committee: A. Canteaut (reviewer).
- J. Chaulet, *Study of public-key cryptosystems based on MDPC quasi-cyclic codes*, University Pierre-et-Marie-Curie, March 20, 2017, committee: N. Sendrier (supervisor), J.P. Tillich.
- R. do Canto de Loura, *Quantum measures, noise and measurement errors in a quantum bit commitment protocol*, Universidade de Lisboa, Instituto Superior Tecnico, March 31, 2017, committee: A. Leverrier (reviewer).
- M. Naya-Plasencia, *Symmetric Cryptography for Long-Term Security*, Habilitation, University Pierre-et-Marie-Curie, May 5, 2017, committee: A. Canteaut.
- H. Kalachi, *Sécurité de Protocoles Cryptographiques Fondés sur la Théorie des Codes Correcteurs d'Erreurs*, July 5, 2017, University of Rouen, committee: J.P. Tillich;
- B. Dravie, *Synchronisation et systèmes dynamiques, application à la cryptographie*, University of Lorraine, July 6, 2017, committee: A. Canteaut (reviewer).
- V. Dragoi, *Approche algébrique pour l'étude et la résolution de problèmes algorithmiques issus de la cryptographie et de la théorie des codes*, July 6, 2017, University of Rouen, committee: N. Sendrier (reviewer), J.P. Tillich;
- V. Migliore, *Cybersécurité matérielle et conception de composants dédiés au calcul homomorphe*, Université de Bretagne Sud, September 26, 2017. committee: N. Sendrier (reviewer);
- A. Leverrier, *Protecting information in a quantum world: from cryptography to error correction*, Habilitation, University Pierre-et-Marie-Curie, September 27, 2017, committee: J.P. Tillich;
- A. Bannier, *Combinatorial analysis of block ciphers with trapdoor*, Arts et Métiers ParisTech, September 29, 2017, committee: A. Canteaut;
- K. Chakraborty, *Cryptography with spacetime constraints*, Université Pierre-et-Marie Curie, October 12, 2017, committee: A. Leverrier (supervisor), J.P. Tillich (supervisor);
- A. Hauteville, *Nouveaux protocoles et nouvelles attaques pour la cryptologie basée sur les codes en métrique rang*, University of Limoges, December 4, 2017, committee: N. Sendrier, J.P. Tillich (supervisor);
- D. Mirandola, *On products of linear error correcting codes*, Leiden University, the Netherlands, and Univ. de Bordeaux, December 6, 2017, committee: A. Canteaut (reviewer, chair).
- G. Spini, *Unconditionally secure cryptographic protocols from coding-theoretic primitives*, Leiden University, the Netherlands, and Univ. de Bordeaux, December 6, 2017, committee: A. Canteaut (chair).
- P. Méaux, *Chiffrement complètement homomorphe hybride*, Research University PSL, December 8, 2017, committee: A. Canteaut (reviewer);
- M. Saad Taha, *Algebraic Approach for Code Equivalence*, Université de Rouen, December 18, 2017. committee: N. Sendrier (reviewer), J.P. Tillich;

10.3. Popularization

- **Alkindi cipher challenge:** Several members of the project-team are involved in the cipher challenge for high-school students "concours Alkindi" <http://www.concours-alkindi.fr/>. Matthieu Lequesne organized the challenge and created the scientific content of the competition. He also gave a talk during the final of the cipher challenge Alkindi on May 17 at the "Cité des Sciences" in Paris. The 2018 edition of the competition has been launched in December 2017 at Lycée de la Vallée de Chevreuse, Gif-sur-Yvette. Matthieu Lequesne, Sébastien Duval and Yann Rotella gave talks on cryptography during the opening ceremony. The best teams from Académies de Dijon and Orléans-Tours have been visiting the SECRET project-team in June 2017 <https://www.youtube.com/watch?v=EVLHEOWAORc>.
- N. Sendrier, *Code-Based Cryptography: State of the Art and Perspectives*, IEEE Security & Privacy, Special Issue on Post-quantum Cryptography. July/August 2017.
- A. Chailloux *Cryptographie Quantique en théorie* - Journée Maths en Mouvement sur l'ordinateur quantique organized by the FSMP, Paris, France, May 2017
- Matthieu Lequesne co-organized the final of the French Tournament of Young Mathematicians at École polytechnique on May 26-28 and was chaired the jury sessions. He also participated to the elaboration of the problems for the 8th French Tournament of Young Mathematicians (TFJM²) in December 2017.
- Matthieu Lequesne co-organized the International Tournament of Young Mathematicians (ITYM) in Iasi, Romania in July 2017 and was part of the international jury.
- Matthieu Lequesne taught for one week during a mathematical summer camp for high school students in Bethlehem, Palestine, organized by the Al Khwarizmi Noether Institute in August 2017.
- Matthieu Lequesne co-organized a weekend for female high-school students interested in mathematics (Rendez-vous des Jeunes Mathématiciennes) at ENS Ulm, November 25-26.
- Yann Rotella gave a talk on cryptography at Lycée Théophile Gautier, Tarbes, January 31, 2017.
- Yann Rotella gave a presentation for *Raconte-moi ta thèse !* during Fete de la Science, at IHP, Paris, October 2017.
- Several members of the team (C. Boura, A. Canteaut, M. Lequesne, A. Leverrier, Y. Rotella) have been involved in the *Cinquante ans d'Inria*, November 2017. They hold a stand to present a serious game on cryptography. A. Canteaut has participated on a panel on Cyber-security. A. Leverrier gave a short talk (pitch de science) on quantum computing.
- Matthieu Lequesne was auditioned by the committee in charge of proposing a reform of mathematical education (Mission Maths Villani-Torossian) on November 29.

MATHERIALS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

E. Cancès

- is the director of CERMICS, the Applied Mathematics department at École des Ponts,
- is a member of the editorial boards of Mathematical Modelling and Numerical Analysis (2006-), SIAM Journal of Scientific Computing (2008-), Communications in Mathematical Sciences (2011-), SIAM Multiscale Modeling and Simulation (2012-), and the Journal of Computational Mathematics (2017-),
- was a member of the executive committee of the CEA-EDF-Inria schools in applied mathematics and computer science (2010-July 2017),
- is co-organizing the IMA Long Program on Multiscale Mathematics and Computing in Science and Engineering, 2017-2018.

V. Ehrlacher

- is a member of the “Conseil d’Enseignement et de Recherche” of Ecole des Ponts,
- has co-organized the Oberwolfach workshop on “Applications of Optimal Transportation in the Natural Sciences”, January 2017 (with J.-D. Benamou and D. Matthes),
- has co-organized a minisymposium on “Numerical methods for electronic structure calculations” at the SIAM CSE conference, February 2017 (with B. Stamm, L. Lin and C. Yang),
- has co-organized the IPAM workshop on “Uncertainty Quantification for Stochastic Systems and Applications”, November 2017 (with M. Katsoulakis, T. Lelièvre, P. Plechac, A. Stuart and D. Trinkle).

G. Ferré and J. Roussel co-organize the working group J-PSI (Jeunes chercheurs en physique statistique et interactions) at IHP, which aims at stimulating interactions between PhD students and post-docs coming from different institutions in Paris and working on the analysis of models in statistical physics.

C. Le Bris is editor-in-chief of Applied Mathematics Research Express (2003-2017). He is a managing editor of Networks and Heterogeneous Media. He is a member of the editorial boards of Annales mathématiques du Québec (2013-), Archive for Rational Mechanics and Analysis (2004-), COCV (Control, Optimization and Calculus of Variations) (2003-), Mathematics in Action (2008-), Nonlinearity (2005-) and Journal de Mathématiques Pures et Appliquées (2009-).

He is a member of the editorial boards of the monograph series Mathématiques & Applications, Series, Springer (2008-), Modelling, Simulations and Applications, Series, Springer (2009-), Springer Monographs in Mathematics, Springer (2016-).

He is a member of

- the Cabinet of the High Commissioner for Atomic Energy,
- the “Comité d’experts” for the Fondation de Recherche pour l’Aéronautique et l’Espace,
- the “International Scientific Advisory Committee” of the Centre de Recherche Mathématique, Université de Montréal,
- the “Advisory Board” of the DFG Cluster of Excellence Engineering of Advanced Materials, Erlangen,
- the “International Scientific Advisory Board” of the DFG research center Matheon, Berlin,
- the “Conseil scientifique de la SMAI” (Scientific Council of the French Applied Maths Society),
- the International Mathematical Union Circle.

He is the president of the strategic committee of the Institut des Sciences du calcul et des données, Sorbonne Universités.

He has held a regular position of Visiting Professor at the University of Chicago.

F. Legoll is a member of the editorial board of SIAM MMS (2012-) and of ESAIM: Proceedings and Surveys (2012-).

T. Lelièvre

- is editor-in-chief of ESAIM: Proceedings and Surveys (with D. Chafai, C. Imbert and P. Lafitte),
- is a member of the “Conseil d’Administration” of SMAI and École des Ponts,
- has co-organized the Journées EDP-Probab at Institut Henri Poincaré (with F. Malrieu),
- has co-organized the IPAM Long Program on “Complex High-Dimensional Energy Landscapes”, September 11th - December 15th 2017 (with C. Clementi, G. Henkelman, R. Hennig, M. Luskin, N. Marom, P. Plechac and C. Schuette),
- has co-organized the ICTS program on “Large deviation theory in statistical physics: Recent advances and future challenges”, August 14th - October 13th 2017 (with A. Ayyer, F. den Hollander, A. Dhar, J.P. Garrahan, C. Jarzynski, M. Krishnapur, S. Sabhapandit and H. Touchette),
- has co-organized with Florent Malrieu and Pierre-André Zitt the workshop “Piecewise Deterministic Markov Processes and sampling”, January 25-27th, 2017,
- has co-organized with C. Chipot and G. Stoltz the “Rencontre Math-Industrie simulation moléculaire dans l’industrie pharmaceutique”, at IHP on 28th April 2017,
- has co-organized with A. Jentzen the Stochastic Computation Workshop at FoCM 2017, Barcelona, July 10th-12th, 2017.

G. Stoltz

- is a member of the scientific council of UNIT (Université Numérique Ingénierie et Technologie),
- has co-organized the IHP trimester “Stochastic Dynamics Out of Equilibrium”, Spring 2017 (with G. Giacomini, S. Olla, E. Saada and H. Spohn).

10.2. Teaching - Supervision - Juries

The members of the project-team have taught the following courses:

- Licence: Outils mathématiques pour l’ingénieur, 15h, L3, École des Ponts (E. Cancès, V. Ehrlacher, M. Josien, F. Legoll, T. Lelièvre),
- Licence: Analyse et calcul scientifique, 30h, L3, École des Ponts (G. Ferré, A. Levitt, M. Josien, G. Stoltz),
- Licence: Projet de 1ère Année, 6h, L3, École des Ponts (J. Roussel, P. Terrier),
- Licence: Mathématiques, 36h, L1, Université Paris Dauphine (G. Ferré, J. Roussel),
- Licence: Optimisation, 15h, L3, École des Ponts (A. Levitt),
- Licence: Équations aux dérivées partielles et éléments finis, 15h, L3, École des Ponts (F. Legoll, A. Levitt),
- Licence: Méthodes numériques pour les problèmes en grande dimension, 17h30, L3, École des Ponts (V. Ehrlacher, S. Boyaval),
- Licence: Maths 1 et 2, 9h, L3, École des Mines (G. Stoltz),
- Licence: méthodes pour la grande dimension, L3, École des Ponts (V. Ehrlacher 10h, S. Boyaval 5h),
- Licence: hydraulique numérique, 15h, L3, École des Ponts (S. Boyaval),
- Master: Modéliser Programmer Simuler, 28 h, M1, École des Ponts (T. Lelièvre),

- Master: Analyse variationnelle des équations aux dérivées partielles, 32h, École Polytechnique (T. Lelièvre),
- Master: Aléatoire, 32h, École Polytechnique (T. Lelièvre),
- Master: Simulation moléculaire, 6h, UVSQ (T. Lelièvre, G. Stoltz),
- Master: Analyse de Fourier, 15h, M1, École des Ponts (V. Ehrlacher, A. Levitt, G. Stoltz),
- Master: Partial differential equations, 21h, M1, École des Ponts (E. Cancès),
- Master: Control of dynamical systems, 16h, M1, École Polytechnique (E. Cancès),
- Master: Projet du département IMI, 12h, M1, École des Ponts (J. Roussel, G. Ferré),
- Master: Analyse spectrale et application aux Équations aux dérivées partielles, 36h, M1, École des Ponts (F. Legoll, V. Ehrlacher),
- Master: Spectral theory and variational methods, 10h, M2, UPMC (E. Cancès),
- Master: Méthodes de quantification des incertitudes en ingénierie, 18h, M2, École des Ponts (V. Ehrlacher),
- Master: Simulation moléculaire en sciences des matériaux, 6h, M1, École des Ponts (V. Ehrlacher),
- Master: Introduction to computational statistical physics, 20h, M2, UPMC (G. Stoltz),
- Master: Méthodes numériques probabilistes, 36 h, M2, UPMC (T. Lelièvre),
- Master: Problèmes multiéchelles, aspects théoriques et numériques, 20h, M2, UPMC (F. Legoll).

The following Habilitation thesis has been defended in the group at École des Ponts:

- Sébastien Boyaval, Topics in the numerical modelling of flows, Université Paris-Est, defended on December 21 2017.

The following PhD theses have been defended in the group at École des Ponts:

- Athmane Bakhta, Modélisation and simulation for photovoltaic applications, Université Paris-Est, École des Ponts, defended on December 19th, 2017, supervised by E. Cancès and T. Lelièvre, co-supervised by V. Ehrlacher,
- G r me Faure, Multiscale methods for the simulation of shock and detonation waves, Universit  Paris-Est,  cole des Ponts and CEA/DAM, defended on November 29th 2017, supervised by G. Stoltz and J.-B. Maillet (CEA/DAM),
- Alessandra Iacobucci, Nonequilibrium steady-states of rotor and oscillator chains, defended on October 20th 2017, University Paris Dauphine, supervised by S. Olla (Dauphine) and G. Stoltz,
- Henri Louvin, Development of adaptive variance reduction methods for Monte Carlo particle transport, Ecole Doctorale PHENIICS, defended on October 12th, supervised by Check Diop (CEA) and T. Leli vre,
- Boris Nectoux, Spectral analysis and semi-classical analysis for metastability in molecular dynamics, Universit  Paris-Est,  cole des Ponts, defended on November 20th, supervised by T. Leli vre and E. Canc s.

The following PhD theses are ongoing in the group at  cole des Ponts:

- Amina Benaceur, Th se CIFRE EDF, started January 1st, 2016, supervised by A. Ern, co-supervised by V. Ehrlacher, in collaboration with G. Blatman (EDF) and S. Meunier (EDF),
- Lingling Cao, Mathematical analysis of models of thermo-electronic transport, Universit  Paris-Est,  cole des Ponts, started November 1st, 2016, supervised by E. Canc s and G. Stoltz,
- Rafa l Coya d, M thodes num riques d terministes et stochastiques pour le transport optimal, Universit  Paris-Est,  cole des Ponts, started October 1st, 2017, supervised by A. Alfonsi and co-supervised by V. Ehrlacher,
- Qiming Du, Mathematical analysis of splitting methods,  cole Doctorale Sciences Math matiques de Paris Centre, started September 1st, 2016, supervised by A. Guyader (UPMC) and T. Leli vre,

- Grégoire Ferré, Efficient sampling methods for nonequilibrium systems, Université Paris-Est, École des Ponts started October 1st, 2016, supervised by G. Stoltz,
- Marc Josien, Multiscale approaches for materials science, started September 1st, 2015, supervised by C. Le Bris,
- Sofiane Martel, Modélisation de la turbulence par mesures invariantes d'EDPS, Université Paris-Est, École des Ponts, started January 1st, 2017, supervised by S. Boyaval and co-supervised by J. Reygner (CERMICS),
- Julien Roussel, Variance reduction techniques for nonequilibrium systems, Université Paris-Est, École des Ponts, started September 1st, 2015, supervised by G. Stoltz,
- Pierre-Loïc Rothé, Numerical methods for the estimation of fluctuations in multi-scale materials and related problems, started October 1st, 2016, supervised by F. Legoll,
- Mouad Ramil, Metastability for interacting particle systems, started October 1st 2017, supervised by T. Lelièvre and J. Reygner (CERMICS),
- Laura Silva Lopes, Rare event simulation and applications to biological systems, started October 1st, 2016, supervised by J. Hénin (IBPC) and T. Lelièvre,
- Sami Siraj-Dine, Modélisation mathématique des matériaux 2D, École des Ponts, started October 2017, supervised by E. Cancès, C. Fermanian and co-supervised by A. Levitt,
- Pierre Terrier, Reduced models for defect migration in metals, Université Paris-Est, École des Ponts and CEA Saclay, started September 1st, 2015, supervised by G. Stoltz and M. Athènes (CEA).

Project-team members have participated in the following PhD juries:

- S. Boyaval, PhD of Riad Sanchez ("Application des techniques de bases réduites à la simulation des écoulements poreux"), defended at IFPEN in December 2017,
- E. Cancès, PhD of Geneviève Dusson, defended at UPMC in October 2017,
- E. Cancès, PhD of Chaoyu Quan, defended at UPMC in November 2017,
- V. Ehrlicher, PhD of Xianglong Duang ("Transport optimal et diffusion de courants"), defended at Université Paris-Saclay in September 2017,
- V. Ehrlicher, PhD of Eleonora Musharbash ("Dynamical Low Rank approximation for PDEs with random parameters"), defended at EPFL in May 2017,
- V. Ehrlicher, PhD of Julien Ricaud ("Symétrie et brisure de symétrie pour certains problèmes non linéaires"), defended at Université de Cergy-Pontoise in June 2017,
- V. Ehrlicher, PhD of Pierre-Éric Allier ("Contrôle d'erreur pour et par les modèles réduits PGD"), defended at ENS Paris-Saclay in November 2017,
- V. Ehrlicher, PhD of Quentin Ayoul-Guilhard ("Méthodes numériques pour la prise en compte de défauts aléatoires en mise en forme de composites quasi-périodiques"), defended at Ecole Centrale Nantes in December 2017,
- T. Lelièvre, referee for the PhD of Arthur Talpaert ("Simulation numérique directe de bulles sur maillage adaptatif avec algorithmes distribuées", defended at Ecole Polytechnique in February 2017,
- T. Lelièvre, PhD of Romain Poncet ("Méthodes numériques pour la simulation d'équations aux dérivées partielles stochastiques non-linéaires en condensation de Bose-Einstein", defended at Ecole Polytechnique in October 2017,
- T. Lelièvre, president of the jury for the PhD of Manon Baudel ("Théorie spectrale pour des applications de Poincaré aléatoires"), defended at Université d'Orléans in December 2017,
- T. Lelièvre, referee for the PhD of Riad Sanchez ("Application des techniques de bases réduites à la simulation des écoulements en milieux poreux"), defended at Université Paris Saclay in December 2017,
- G. Stoltz, referee for the PhD of Romain Poncet ("Méthodes numériques pour la simulation d'équations aux dérivées partielles stochastiques non-linéaires en condensation de Bose-Einstein"), defended at École Polytechnique in October 2017,
- G. Stoltz, referee for the PhD of Viviana Letizia ("Modèles microscopiques pour la loi de Fourier"), defended at Université Paris Dauphine in December 2017.

Project-team members have participated in the following habilitation jury:

- T. Lelièvre, HDR of Fabio Pietrucci (“Inventing general simulation methods to study the transformations of matter”), defended at UPMC on December 1st 2017.

10.3. Conference participation

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

- S. Boyaval, Finite-Element for Flows, Roma, April 2017,
- S. Boyaval, RWTH AICS colloquim, Aachen, November 2017,
- S. Boyaval, weekly seminar of Collège de France, Paris, December 2017,
- E. Cancès, workshop on New trends in Mathematical Physics at the interface of Analysis and Probability, University College London, England, February 2017,
- E. Cancès, SIAM conference on Scientific Computing, Atlanta, Georgia, February 2017,
- E. Cancès, Mathematical Physics seminar, Université Paris Dauphine, March 2017,
- E. Cancès, weekly seminar of the Mathematics department, University of Metz, March 2017,
- E. Cancès, workshop on Wavelet and Tensor Methods for Partial Differential Equations, Berlin, May 2017,
- E. Cancès, IMA workshop on Mathematical Modeling of 2D Materials, Minneapolis, Minnesota, May 2017,
- E. Cancès, weekly seminar of the Mathematics department, Peking University, Beijing, China, June 2017,
- E. Cancès, workshop on Focus activity on quantum and kinetic problems, Beijing, China, June 2017,
- E. Cancès, BIRS workshop on Mathematical and Numerical Methods for Time-Dependent Quantum Mechanics from Dynamics to Quantum Information, Oaxaca, Mexico, August 2017,
- E. Cancès, workshop on Advances in mathematical modelling and numerical simulation of superfluids, University of Rouen, August 2017,
- E. Cancès, Colloquium lecture, University of Kansas, Lawrence, Kansas, September 2017,
- E. Cancès, workshop on Multiscale Theory and Computation, Minneapolis, Minnesota, September 2017,
- E. Cancès, MOANSI workshop, Aachen, Germany, October 2017,
- V. Ehrlacher, Demi-journée d’échange Labex Bézout/EADS, Marne-la-Vallée, October 2017,
- V. Ehrlacher, Seminar Institut für Numerische Simulation, Bonn, Allemagne, November 2017,
- V. Ehrlacher, IPAM workshop on “Uncertainty Quantification for Stochastic Systems and Applications”, Los Angeles, California, November 2017,
- V. Ehrlacher, MORTECH 2017 (keynote lecture), Sevilla, Spain, November 2017,
- V. Ehrlacher, Oberwolfach workshop on “Multiscale and High-Dimensional Problems“, Oberwolfach, Germany, April 2017,
- V. Ehrlacher, Conference in honor of Y. Maday’s 60th birthday, Roscoff, May 2017,
- V. Ehrlacher, SIAM CSE conference, Atlanta, Georgia, February 2017,
- G. Ferré, Young researchers’ seminar, IHP semester, “Stochastic dynamics out of equilibrium”, Paris, June 2017,
- G. Ferré, Large deviation theory in statistical physics, ICTS, Bangalore, September 2017,
- M. Josien, CAMP Seminar, University of Chicago, April 2017,

- M. Josien, SciCADE Conference, Bath, September 2017,
- M. Josien, Séminaire de Physique Mathématique-EDP, Institut de Mathématiques de Bordeaux, December 2017,
- D. Kazerani, weekly seminar, Orléans, October 2017,
- D. Kazerani, Post-doc days of IHES, Orsay, October 2017,
- D. Kazerani, weekly seminar IRD, Paris, October 2017,
- C. Le Bris, Conference in honor of Yvon Maday's 60th birthday, May 2017,
- C. Le Bris, Conference in honor of Patrick Joly's 60th birthday, August 2017,
- C. Le Bris, Workshop HPC, Institut d'Etudes Scientifiques de Cargèse, September 2017,
- C. Le Bris, Multiscale Modeling, Theory, and Computation, Conference in honor of Mitchell Luskin's 65th birthday, Minneapolis, September 2017,
- C. Le Bris, Homogenization Theory and Applications, Weierstrass Institute Berlin, October 2017,
- C. Le Bris, BIRS Workshop on "Computational Uncertainty Quantification", Banff International Research Station (BIRS), Canada, October 2017,
- C. Le Bris, Séminaire d'Automatique du plateau de Saclay, June 2017,
- C. Le Bris, Forum Teratec, July 2017,
- F. Legoll, Workshop stochastic homogenization, Bonn, February 2017,
- F. Legoll, UNECECOMP Conference, Rhodes, June 2017,
- F. Legoll, ADMOS Conference, Verbania, June 2017,
- F. Legoll, CIMPA Summer school on multiscale methods, Lucknow, India, July 2017,
- F. Legoll, USNCCM Conference, Montreal, July 2017,
- F. Legoll, COMPLAS 2017 Conference, Barcelona, September 2017,
- F. Legoll, Scicade conference, Bath, September 2017,
- F. Legoll, IMA program on multiscale mathematics, Minneapolis, September 2017,
- F. Legoll, séminaire Université de Genève, October 2017,
- F. Legoll, MORTECH 2017 conference, Sevilla, November 2017,
- F. Legoll, IPAM Program, Los Angeles, November, 2017,
- T. Lelièvre, workshop on Multiscale methods for stochastic dynamics, Geneva, February 2017,
- T. Lelièvre, Séminaire du Laboratoire de Chimie Physique, Université Paris-Sud, March 2017,
- T. Lelièvre, CECAM workshop "Exploiting finite-size effects in simulations", UPMC, April 2017,
- T. Lelièvre, CIRM workshop "interactions EDP/probabilités - équations cinétiques, temps long et propagation du chaos", Marseille, April 2017,
- T. Lelièvre, Colloquium Lorrain de Mathématiques, Université de Nancy, April 2017,
- T. Lelièvre, IHP trimester on Stochastic Dynamics Out of Equilibrium, Paris, April 2017,
- T. Lelièvre, CECAM workshop "Beyond Kd's: New computational methods to address challenges in drug discovery", EPFL, Lausanne June 2017,
- T. Lelièvre, Séminaire de probabilités, ENS Lyon, June 2017,
- T. Lelièvre, "Multiscale Theory and Computation Conference", University of Minneapolis, September 2017,
- T. Lelièvre, "Quasistationary Distributions: Analysis and Simulation", University of Paderborn, September 2017,
- T. Lelièvre, Colloquium du laboratoire Dieudonné, Université Nice Sophia Antipolis, October 2017,

- T. Lelièvre, “Workshop Stochastic Sampling and Accelerated Time Dynamics on Multidimensional Surfaces”, IPAM, Los Angeles, October 2017,
- T. Lelièvre, Workshop “Bridging Scales in Molecular Biology”, Mathematics & Physical Sciences conference of the Simons Foundation, New York, November 2017,
- T. Lelièvre, workshop “Mathématiques pour la neutronique”, GDR MANU, Paris, November 2017,
- T. Lelièvre, Mathematisches Kolloquium RWTH Aachen University, Aachen, December 2017,
- A. Levitt, Young researchers working group, UPMC, January 2017,
- A. Levitt, Chemistry colloquium, Cornell, New York, February 2017,
- A. Levitt, THEOS seminar, Cornell, New York, February 2017,
- A. Levitt, SIAM CSE conference, Atlanta, Georgia, February 2017,
- A. Levitt, Conference in honor of Y. Maday’s 60th birthday, Roscoff, May 2017,
- A. Levitt, Scalable solvers group seminar, Lawrence Berkeley National Lab, California, June 2017,
- A. Levitt, CCP17, Paris, July 2017,
- A. Levitt, Density Functional Theory and Beyond, Warwick, July 2017,
- A. Levitt, Mathematical physics summer school, Zurich, July 2017,
- A. Levitt, ICJ seminar, Lyon, November 2017,
- P. Monmarché, Groupe de travail Prob., Théo. Erg. et Systèmes Dynamiques, LMRS, Rouen, January 2017,
- P. Monmarché, Workshop PDMP et sampling, ENPC, Marne-la-Vallée, January 2017,
- P. Monmarché, Conférence PDE/Probability Interactions: Kinetic Equations, CIRM, Marseille, April 2017,
- P. Monmarché, Seminar of the Department of Statistics, University of Oxford, May 2017,
- P. Monmarché, Groupe de travail de probabilités, Université Paris 5, May 2017,
- P. Monmarché, Trimestre IHP dynamiques hors équilibre, Institut Henri Poincaré, Paris, June 2017,
- B. Nectoux, Worskhop “Interactions EDP/probabilités : équations cinétiques, temps long et propagation du chaos”, CIRM, April 2017,
- B. Nectoux, SciCADE, university of Bath, UK, Septembre 11-15, 2017,
- B. Nectoux, Workshop “Quasi-stationary distribution: analysis and simulation”, Paderborn, September 2017,
- P.-L. Rothé, SciCADE 2017 Conference, Bath, UK, September 2017,
- P.-L. Rothé, USNCCM14, 14th U.S. National Congress on Computational Mechanics, Montreal, Canada, July 2017,
- P.-L. Rothé, Congrès SMAI 2017, La Tremblade, June 2017,
- J. Roussel, Young researchers’ seminar, IHP semester “Stochastic dynamics out of equilibrium”, Paris, June 2017,
- J. Roussel, ICL Seminar, London, November 2017,
- L. Silva Lopes, “Hands-on” Workshop on Enhanced Sampling and Free-Energy Calculation, Urbana-Champaign, Illinois, September 2017,
- G. Stoltz, seminar at Army Research Laboratory, Aberdeen Proving Grounds, February 2017,
- G. Stoltz, seminar at University of Massachussetts, February 2017,
- G. Stoltz, seminar at University of Geneva, March 2017,
- S. Siraj-Dine, Density Functional Theory and Beyond, Warwick, July 2017,
- P. Terrier, The MRS Spring Meeting & Exhibit, Phoenix, April 2017,
- P. Terrier, Séminaire des doctorants du LAMFA, Amiens, December 2017.

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

- E. Cancès, The mathematics of quantum chemistry, 9h, GDR CORREL winter school, Paris, January 2017,
- E. Cancès, Density Functional Theory: Models and numerical methods, 4h, Beijing, China, June 2017,
- E. Cancès, Mathematical aspects of electronic structure theory, 3h, Aussois, France, June 2017,
- E. Cancès, Mathematical structure of quantum mechanics, 3h, Heidelberg, Germany, October 2017,
- T. Lelièvre, Lectures on “Algorithms for computational statistical physics”, 3h, ICTS, Bangalore, August 2017,
- T. Lelièvre, Tutorial on “Sampling efficiently metastable dynamics: algorithms and mathematical analysis”, 2h, IPAM, Los Angeles, September 2017,
- A. Levitt, Numerical analysis of periodic quantum systems, 2h, Aalborg, Denmark, June 2017,
- G. Stoltz, From a microscopic description of matter to a macroscopic one on a computer: computational statistical physics, 6h, CIMPA Summer School on Multiscale Computational Methods and Error Control, IIT Kanpur, India, July 2017,
- Random homogenization, theoretical and numerical aspects, 6h, CIMPA Summer School on Multiscale Computational Methods and Error Control, IIT Kanpur, India, July 2017.

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

- G. Ferré, Complex high-dimensional energy landscapes, UCLA, Los Angeles, October 2017,
- G. Ferré, Numerical Aspects of Nonequilibrium dynamics, IHP semester “Stochastic dynamics out of equilibrium”, Paris, April 2017,
- G. Ferré, Trends and Advances in Monte Carlo Sampling Algorithms, Duke University, Durham (North Carolina), December 2017,
- D. Kazerani, colloque EDP Normandie, Caen, October 2017,
- B. Nectoux, Workshop “Dynamiques stochastiques hors d’équilibre”, CIRM, April 2017,
- P.-L. Rothé, colloque EDP Normandie, Caen, October 2017,
- J. Roussel, workshop “Trends and Advances in Monte Carlo Sampling Algorithms”, SAMSI (Duke University), December 2017,
- J. Roussel, Numerical Aspects of Nonequilibrium dynamics, IHP semester “Stochastic dynamics out of equilibrium”, Paris, April 2017,
- L. Silva Lopes, Beyond Kd’s: New computational methods to address challenges in drug discovery, Lausanne, Switzerland, June 2017,
- L. Silva Lopes, CEMRACS 2017: Numerical methods for stochastic models: control, uncertainty quantification, mean-field, Marseille, July, 2017,
- L. Silva Lopes, 11th Triennial Congress of the World Association of Theoretical and Computational Chemistry, Munich, Germany, August 2017,
- L. Silva Lopes, Stochastic Sampling and Accelerated Time Dynamics on Multidimensional Surfaces, Los Angeles, California, October 2017,
- P. Terrier, SMAI 2017, La Tremblade, June 2017.

Pierre Terrier has won the best poster award at SMAI 2017.

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

- M. Josien, colloque EDP Normandie, Caen, October 2017,
- Mouad Ramil, PDE/Probability Interactions: Kinetic Equations, Long time and Propagation of Chaos at CIRM, Marseille, April 2017
- Mouad Ramil, Workshop on Quasi-Stationary distributions, Paderborn, September 2017
- P.-L. Rothé, Winter School on Numerical Analysis of Multiscale Problems, Hausdorff Research Institute for Mathematics, Bonn, Germany, January 2017,
- J. Roussel, CEMRACS, CIRM, July 2017,
- L. Silva Lopes, IPAM Long Program on “Complex High-Dimensional Energy Landscapes”, Los Angeles, California, September-November 2017.

10.4. Software development and contributions

- A. Levitt has added methods for optimization on Riemannian manifolds to the Optim.jl optimization library, see <https://github.com/JuliaNLSolvers/Optim.jl>.
- A. Levitt has published an implementation of the method developed in [16] to construct Wannier functions, see <https://github.com/antoine-levitt/wannier>.
- In the framework of the PhD of Laura Silva Lopes, L. Silva Lopes and T. Lelièvre have implemented a new tutorial on the NAMD code in order to popularize the Adaptive Multilevel Splitting method among the practitioners, see <http://www.ks.uiuc.edu/Training/Tutorials/namd/ams-tutorial/tutorial-AMS.pdf>.
- J. Roussel and G. Stoltz have added new features to the Simol code, in particular concerning the use of control variates.

10.5. Popularization

- G. Ferré gave a talk about statistical physics and its applications to undergraduate students at Lycée Pierre Corneille, Rouen, in November 2017.
- A. Levitt is a member of the editorial board of Interstices, Inria’s popularization website.
- P. Monmarché gave a talk about mathematics and music to high school students at lycée Pablo Picasso, Avion, in May 2017.
- P. Monmarché participated to Les Matinales de la Recherche de l’ENPC and presented a poster about his work to the students of ENPC in April 2017.
- G. Stoltz participated to Les Matinales de la Recherche de l’ENPC and gave a talk about his work to the staff of ENPC in April 2017.
- G. Stoltz, together with Gilles Buisson (Ecole des Ponts), published a contribution to the proceedings of QPES 2017 (Questions de Pédagogie dans l’Enseignement Supérieur), on his teaching experience involving flipped classrooms organized at the level of a complete class of first year students at Ecole des Ponts. See G. Buisson and G. Stoltz, La classe inversée à grande échelle en école d’ingénieur, Actes du colloque QPES 2017, 633-640.

MATHRISK Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- A. Alfonsi:
 - Co-organizer of the conference "Advances in Financial Mathematics", 10-13 January 2017, <https://fin-risks2017.sciencesconf.org/>.
 - Co-organizer of the working group seminar of MathRisk "Méthodes stochastiques et finance".
- J. Lelong :
 - Member of the organizing committee of Les journées de Probabilités, 2017, France, Aussois.
 - Member of the organizing committee of CEMRACS, 2017, Marseille.
 - Member of the organizing committee of Les journées SMAI MODE 2018, Grenoble.
- A. Sulem
 - Co-organizer of the seminar Inria-MathRisk /Université Paris 7 LPMA "Numerical probability and mathematical finance". <https://www.lpma-paris.fr/mathfipronum/gt>

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

B. Jourdain: Member of the scientific committee of the congrès SMAI 2017

9.1.2.2. Reviewer

A. Sulem: Reviewer for *Mathematical Reviews*

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

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

9.1.3.2. Reviewer - Reviewing Activities

The members of the team reviewed numerous papers for many journals in probability, finance, stochastic control, applied mathematics, ...

9.1.4. Invited Talks

- A. Alfonsi
 - "Maximum Likelihood Estimation for Wishart processes", conference on "Mathematics of Quantitative Finance", Oberwolfach, March 1.
 - "Optimal Execution in a Hawkes Price Model and Calibration", Market Microstructure and High Frequency Data June 1-3, The University of Chicago, June 2.
 - "Maximum Likelihood Estimation for Wishart processes", Recent Developments in Numerical Methods with Applications in Statistics and Finance Mannheim, Germany, June 9.
 - "Sampling of probability measures in the convex order and approximation of Martingale Optimal Transport problems." New York, conference in honour of Jim Gatheral, NYU, October 15.
 - "Sampling of probability measures in the convex order and approximation of Martingale Optimal Transport problems." GT CMAP-ENSTA-ENSAE, November 27.
- V. Bally
 - LMS-EPSRC Durham Symposium 10-20 July. Regularity for the solution of jump equations using an interpolation method.
 - Conference of Stochastic Processes and their Applications (SPA2017) 24-28 July. Regularity for the solution of jump equations using an interpolation method.
 - Workshop on Piecewise Deterministic Markov Processes, 29.05-2.06 Gaussian noise versus Poisson Point Measures in PDMP's.
- B. Jourdain:
 - Workshop Stochastic Sampling and Accelerated Time Dynamics on Multidimensional Surfaces, IPAM, Los Angeles, 16-20 October : Convergence and efficiency of adaptive importance sampling techniques with partial biasing
 - Workshop Singular McKean-Vlasov dynamics, Sophia-Antipolis, 14-15 September : Existence to calibrated regime-switching local volatility model
 - Summer school CEMRACS, Marseille, 17-21 July : The Metropolis-Hastings algorithm, introduction and optimal scaling of the transient phase
 - Workshop Stochastic Computation, FOCM 2017, Barcelona, 10-12 July : Strong convergence properties of the Ninomiya-Victoir scheme and applications to multilevel Monte Carlo methods
 - Workshop BSDEs SPDEs, Edinburgh, 3-7 July : Existence to calibrated regime-switching local volatility model
 - Conference PDE/Probability Interactions : Kinetic Equations, Large Time and Propagation of Chaos, Marseille, 18-22 April : On a stochastic particle approximation of the Keller-Segel equation
 - Conference PDE and probability methods for interaction, Sophia-Antipolis, 30-31 March : Evolution of the Wasserstein distance between the marginals of two Markov processes
 - Applied Mathematics seminar of the Collège de France, February 24 : Multitype sticky particles and diagonal hyperbolic systems
 - Conference Advances in Financial Mathematics, Paris, 10-13 January : Existence to a calibrated regime-switching local volatility model
- J. Lelong
 - High Performance Computing session during CEMRACS: 4 hours of lectures and 6 hours of hands-on sessions, Marseille.
- A. Sulem
 - Plenary talk at the Congrès SMAI 2017, 8ème biennale française des Mathématiques Appliquées et Industrielles, Ronce-les-bains, June 20017, <http://smai.emath.fr/smai2017/index.php>

- "Recent advances in financial mathematics", conference organised by "Financial Risks Chair", Paris, Janvier 2017. <https://fin-risks2017.sciencesconf.org/program>
- Workshop on *Optimal Stopping in Complex environments*, Bielefeld University, December 18-20 2017, <https://sites.google.com/view/imwworkshop17/>
- Workshop on "Asymptotics of Stochastic Dynamics", University of Swansea, August, 29-21, 2017
- Simulation of Stochastic graphs and applications symposium, International Conference on Monte Carlo techniques, Paris, July 5-8, 2017 <https://montecarlo16.sciencesconf.org>

9.1.5. Scientific Expertise

B. Jourdain: Member of the Scientific Advisory Board of the Center for interdisciplinary Research in Biology, Collège de France : March 1st and 2nd 2017

9.1.6. Research Administration

- A. Alfonsi
 - Deputy director of the CERMICS since April 2017.
 - In charge of the Master "Finance and Application" at the Ecole des Ponts.
- D. Lamberton
 - Vice-president for research at Université Paris-Est Marne-la-Vallée
- B. Jourdain
 - Head of the doctoral school MSTIC, University Paris-Est
- A. Sulem
 - Member of the Committee for technology development, Inria Paris
 - Corresponding member of the comité opérationnel d'évaluation des risques légaux et éthiques (COERLE) at Inria Paris research center
 - Member of the Committee for Inria international Chairs

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence :

- A. Alfonsi
 - 'Probabilités', first year course at the Ecole des Ponts.
- B. Jourdain
 - "Introduction to probability theory", 1st year, Ecole Polytechnique
 - "Mathematical finance", 2nd year ENPC
- V. Bally
 - Hilbertien Analysis L3 (36h)

Master

- A. Alfonsi:
 - "Traitement des données de marché : aspects statistiques et calibration", lecture for the Master at UPEMLV.
 - "Mesures de risque", Master course of UPEMLV and Paris VI.
 - Professeur chargé de cours at Ecole Polytechnique.

- V. Bally
 - Interest rates (20h) M2 filière finance
 - Malliavin calculus and applications in finance (30h) M2 filière finance
 - "Risk analysis " M2 filière actuariat (45h)
- B. Jourdain, B. Lapeyre ; course "Monte-Carlo methods", 3rd year ENPC and Master Recherche Mathématiques et Application, University of Marne-la-Vallée
- J.-F. Delmas, B. Jourdain : course "Jump processes with applications to energy markets", 3rd year ENPC and Master Recherche Mathématiques et Application, University of Marne-la-Vallée
- B. Lapeyre: Monte-Carlo methods in quantitative finance, Master of Mathematics, University of Luxembourg,
- D. Lamberton: Calcul stochastique pour la finance, master 1 course, Université Paris-Est Marne-la-Vallée
- A. Sulem :
 - "Finite difference for PDEs in Finance", Master 2 MASEF, Université Paris IX-Dauphine, Département Mathématiques et Informatique de la Décision et des Organisations (MIDO), 27 h.
 - "PDE methods in Finance", Master of Mathematics, University of Luxembourg, 22 h lectures and responsible of the module "Numerical Methods in Finance".

Doctorat :

A. Sulem : "Stochastic Control with Applications to Mathematical Finance", International summer school in "Financial Mathematics and Actuarial Science", **Doctoral lectures**, (30 heures), Atlantic Association for Research in the Mathematical Sciences, University of Prince Edward Island (UPEI), Canada, July <https://aarms.math.ca/summer-school>

9.2.2. Supervision

HdR : J. Lelong, Quelques contributions aux méthodes numériques probabilistes et à la modélisation stochastique, Université Grenoble-Alpes, September 2017.

- PhD in progress :
 - Adel Cherchali, "Numerical methods for the ALM", funded by Fondation AXA, starting from September 2017, Supervisor: A. Alfonsi
 - Rafaël Coyaude, "Deterministic and stochastic numerical methods for multimarginal and martingale constraint optimal transport problems", starting from October 2017, Supervisor: A. Alfonsi
 - Rui Chen (Fondation Sciences Mathématiques de Paris grant), "Stochastic Control of mean field systems and applications to systemic risk, from September 2014, Université Paris-Dauphine, Supervisor: A. Sulem.
 - Marouen Iben Taarit , " On CVA and XVA computations ", CIFRE Natixis/ENPC, Supervisor: Bernard Lapeyre
 - Giulia Terenzi , "American options in complex financial models", Université Paris-Est Marne-la-Vallée, Supervisors: Damien Lamberton and Lucia Caramellino, from University Tor Vergata, Rome
 - Alexandre Zhou (started November 2015) "Analysis of stochastic particle methods applied to finance", Supervisor: B. Jourdain
 - Oumaima Bencheikh (started November 2017) "Acceleration of probabilistic particle methods", Supervisor: B. Jourdain

9.2.3. Juries

- Damien Lambertson
"Opponent" for the PhD thesis defense of Hannah Dyrssen (student of Erik Ekstrom) at Uppsala University (Sweden), May 2017.
- Benjamin Jourdain
Referee for the PhD thesis and participation to the jury for the defense of the PhD thesis of
 - Victor Reutenauer, defended on March 22, University Côte d'Azur
 - Daphné Giorgy, defended on June 2, University Pierre and Marie Curie
 - Radu Maftei, defended on December 14, University Côte d'Azur
- Agnès Sulem
 - Participation to the committee for the recruitment of a Professeur in "applied mathematics, finance and numerical probability", Laboratoire de probabilités (LPMA), Université Paris VI, 2017
 - Participation to the committee for the recruitment of a Assistant professor in "économie, finance et game theory", Université Paris-Dauphine, 2017.
 - Participation to the jury (Chair) for the defense of the PhD thesis of Amine Ismail, *Robust modeling of volatility and application to derivatives pricing and portfolio optimization*, December 15 2017, Université Paris-Diderot - Paris 7.
 - Participation to the jury (Chair) for the defense of the PhD thesis of Jiang Pu, *Contrôle optimal et applications en finance: exécution optimale, couverture d'options et choix de portefeuille*, September 25 2017, Université Paris-Diderot - Paris 7.

MOKAPLAN Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

G. Carlier has organized CMO-BIRS 17w5093.

J-D. Benamou has co-organized Brenier 60.

J-D. Benamou has co-organized MFO workshop 1705 (February).

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Guillaume Carlier is in the board of Journal de l'école Polytechnique, Applied Mathematics and optimization (since 2016) and Mathematics and financial economics, with Filippo Santambrogio and Thierry Champion he co-edited a special issues of RICAM Series devoted to optimal transport. G. Peyré is editor for SIAM Journal of Imaging Sciences and Springer Journal of Mathematical Imaging and Vision. He co-edited a special issues of RICAM Series devoted to inverse problems.

9.1.2.2. Reviewer - Reviewing Activities

The members of the team are frequently reviewing papers in SIIMS (SIAM Journal on Imaging Sciences), JMAA (Journal of Mathematical Analysis and Applications), IPol (Image Processing Online), JVCi (Journal of Visual Communication and Image Representation), COCV, M2AN ... Discrete and computational geometry, Journal of the London Math Society, JOTA, JCP, "Information and Inference: A Journal of the IMA", JMIV, Optimization Letters, PAMI, SIAM optimization and control, IPMI, MICCAI (leading conferences in medical imaging), IEEE Information Theory, ICLR, NIPS, ICML (important machine learning conferences).

9.1.3. Invited Talks

Y. De Castro gave talks at Séminaire d'Informatique de l'Ecole Normale Supérieure, Lyon, and Séminaire de Probabilités de l'Ecole Normale Supérieure, Lyon, Groupe de Travail "Gaussian Process" Université Jean Monnet, St-Etienne, Séminaire de Probabilités de Lille, Séminaire de Probabilités et Statistique de Liège, Séminaire de Probabilités et Statistique de Versailles, LMV, Séminaire de Statistique de Toulouse, IMT, Groupe de Travail "Sequential Structured Statistical Learning", IHES, Cambridge Statistics Seminar, Cambridge, UK.

G. Carlier gave talks in Banff, Victoria, Naples, Le Teich, Toulouse (conference in honor of P. Cattiaux and C. Léonard), Paris (conference in honor of Y. Brenier, functional analysis seminar at IMJ and Game theory seminar at IHP), PGMO Days Paris Saclay.

J-D. Benamou was invited speaker at FOCM (Barcelona, July), CEMRACS (CIRM, July), Conf. in Honor of P. Joly (Gif, September) SPO (IHP, October) .

I. Waldspurger gave talks at Journées EDP (Roscoff, June), and at workshops on phase retrieval (Minneapolis, August) and on generative models, parameter learning and sparsity (Cambridge, October). She also gave a mini-course at Journées de géométrie algorithmique (Aussois, December).

V. Duval has given talks at the SPOC seminar (Université de Dijon, January) and Statistics seminar (Télécom ParisTech, September).

F-X. Vialard gave talks at MIT, csail, in the medical imaging group, in Chapell Hill University (April), workshop on applied geometric mechanics (Darryl Holm's anniversary) in Madrid (July), Classic and Stochastic Approaches to Mathematical Fluid Dynamics at Imperial College (September), workshop in Cambridge about growth and form (November), and about mathematics for imaging (December), Geometric Functional Data Analysis Workshop in Tallahassee (September), GMO (Paris-Saclay).

T. Gallouët gave a talk at the ANEDP seminar of Paris Sud University (December 2017).

9.1.4. Research Administration

J-D. Benamou is an elected member of the "Conseil Académique" of the PSL COMUE.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master : V. Duval, Student project supervision, October 2017 to March 2018, M2, INSA Rouen-Normandie

Licence : I. Waldspurger, Analyse 1, Université Paris-Dauphine, 72h.

Master : Y. De Castro, Master 1 course on Statistics at Orsay.

9.2.2. Supervision

Internship :

PhD in progress : Miao Yu, *Optimal Transport distances and Geophysical imaging* J-D. Benamou (co-direction J.-P. Vilotte, IPGP).

PhD in progress : Paul Catala, *Low-rank approaches for off-the-grid superresolution*, October 2016, G. Peyré and V. Duval.

PhD in progress : Lucas Martinet *Multi-Marginal OT* Oct. 2017 , J-D. Benamou.

PhD in progress : Aude Genevay, *Optimal Transport for Machine Learning* , october 2015, G. Peyré.

PhD in progress : Quentin Denoyelle, *Off-the-grid super-resolution: theory, algorithms and applications in fluorescence imaging*, October 2014, G. Peyré and V. Duval.

Postdoc completed:

PhD completed: Lenaïc Chizat

Postdoc in progress : A. Natale (Inria/Prestige)

Postdoc in progress : J.B. Courbot (PSL IRIS, in collaboration with LMD, ENS).

PhD in progress : Ernesto Araya, *Measures on graphs* , Y. De Castro

9.2.3. Juries

J-D. Benamou F-X. Vialard were in the PhD committee of Lenaïc Chizat (Paris-Dauphine, November).

J-D. Benamou was in the HDR committee of F-X. Vialard (Paris-Dauphine, December).

G. Carlier and F-X. Vialard were in the PhD committee of Xianglong Duan (École Polytechnique, September).

G. Carlier was in the HDR committee of Francisco Silva (Limoges) and Daniela Tonon (Dauphine), in the PhD committee of Fatima Al Reda (Orsay), Xianglong Duan (Polytechnique), Van-Thanh Nguyen (Limoges) and Luigia Ripani (Lyon). G. Carlier was president of the committee for the PGMO PhD. award.

QUANTIC Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Journal

8.1.1.1. Member of the Editorial Boards

Pierre Rouchon is member of the editorial board of Annual Reviews in Control (since 2016).

Mazyar Mirrahimi was a guest editor for the journal "Quantum Science and Technology" (Institute Of Physics, 2016-2017), Special issue on "Quantum coherent feedback and quantum reservoir engineering".

8.1.1.2. Reviewer - Reviewing Activities

Zaki Leghtas served as a referee for Physical Review Journals.

Mazyar Mirrahimi served as a referee for Physical Review Journals.

Pierre Rouchon has been a reviewer for several automatic control and dynamical systems journals and conferences.

Alain Sarlette has been a reviewer for several automatic control and dynamical systems journals and conferences.

8.1.2. Invited Talks

Mazyar Mirrahimi, July 2017, ICTS (Workshop Open Quantum Systems), Bangalore, India.

Mazyar Mirrahimi, June 2017, 22ème conférence Claude Itzykson, CEA Saclay, France.

Mazyar Mirrahimi, June 2017, CIFAR Workshop on Quantum Cavities, Jouvence, Quebec, Canada.

Mazyar Mirrahimi, May 2017, L2S, Supelec, France.

Mazyar Mirrahimi, April 2017, Conference of Optical Society of America, Quantum Information and Measurement, Paris, France.

Mazyar Mirrahimi, March 2017, CMAP, Ecole Polytechnique, France.

Mazyar Mirrahimi, February 2017, UVSQ, France.

Pierre Rouchon, November 2017, Control and Optimization Conference on the occasion of Frédéric Bonnans 60th birthday, Palaiseau, France.

Pierre Rouchon, June 2017, 22ème conférence Claude Itzykson, CEA Saclay, France.

Pierre Rouchon, April 2017, workshop on Quantum Control Theory: Mathematical Aspects and Physical Applications, TUM-IAS, Garching, Germany.

Pierre Rouchon, April 2017, 4th Workshop on Quantum Non-Equilibrium Dynamics, University of Nottingham, UK.

Alain Sarlette, July 2017, Praeqsys: Principles and Applications of Control in Quantum Systems, Seattle, USA.

Alain Sarlette, June 2017, L2S, Supelec, France.

Rémi Azouit, February 2017, Sherebrooke University, Canada.

8.1.3. Scientific Expertise

Mazyar Mirrahi is a member of the Technical Committee on "Distributed Parameter Systems" in IFAC (International Federation of Automatic Control).

Pierre Rouchon is a member of the scientific committee of LAGEP (Laboratoire d'Automatique et de Génie des Procédés) since 2017

Pierre Rouchon is a membre of the "Conseil Scientifique du DIM Math Innov" since 2017.

Pierre Rouchon is a member of the "Conseil de la recherche de PSL " since 2016.

Pierre Rouchon is a member of the "Conseil Scientifique du Conservatoire National des Arts et Metiers" since 2014.

Pierre Rouchon was a member of the scientific committee of PRACQSYS 2017

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Zaki Leghtas taught a course on Quantum Mechanics at Paris Sciences et Lettres (40 hours).

Zaki Leghtas taught a course on Quantum Mechanics and Statistical Physics at Mines ParisTech (12 hours).

Zaki Leghtas taught a course on Complex Analysis at Mines ParisTech (10 hours).

Mazyar Mirrahi and Pierre Rouchon have given a course (20 hours) entitled "UE : Analyse et contrôle de systèmes quantiques " in the "Master de sciences et technologies, mention mathématiques et applications, Université Pierre et Marie Curie".

Mazyar Mirrahi is hired as a professeur chargé de cours à temps partiel of Applied Mathematics at Ecole Polytechnique. His teaching will start during winter 2018.

Mazyar Mirrahi has given TDs of the courses on Probabilities and on Stochastic Processes at Ecole des Mines de Paris.

Pierre Rouchon gave a course on "Cryptographie, théorie des nombres et information quantique" at Mines ParisTech (24 hours).

Pierre Rouchon gave a course on "Modelling, simulation and feedback of open quantum systems" in the PSL-Master, PSL-IT, IQ Ingénierie Quantique (12 hours).

Alain Sarlette has given a master course on "Probabilistic robotics" at Ghent University (30 hours) and has given TDs of the courses on Probabilities and on Stochastic Processes at Ecole des Mines de Paris.

Alain Sarlette has given a quantum-related lecture in the course on Stochastic Processes (5 hours), Ecole des Mines de Paris.

8.2.2. Supervision

PhD in progress: Raphael Lescanne. ENS. "Engineering Multi-Photon Dissipation In Superconducting Circuits For Quantum Error Correction". September 2016. (advisors: Zaki Leghtas and Benjamin Huard).

PhD: Rémi Azouit. Mines Paristech. "Adiabatic elimination for open quantum systems". 2014-2017. (advisors: Pierre Rouchon and Alain Sarlette), Defended on Oct 2017.

PhD in progress: Gerardo Cardona. Mines ParisTech. "Beyond static gains in analog quantum feedback control". Nov 2016 (advisors: Pierre Rouchon and Alain Sarlette).

PhD in progress: Alain Sarlette is co-supervising 3 PhD students with his former institution UGent (Simon Apers, Zhifei Zhang, Arash Farnam). Simon Apers is working on (quantum) network algorithms accelerations and intends to address other quantum control questions.

PhD: Joachim Cohen. ENS. “Autonomous quantum error correction with superconducting circuits”. 2013-2017 (advisor: Mazyar Mirrahimi), Defended on Feb 2017.

PhD in progress: Lucas Verney. ENS. “Robust quantum information processing with superconducting circuits”. Sept 2016. (advisors: Zaki Leghtas and Mazyar Mirrahimi).

PhD in progress: Jérémie Guillaud. ENS. “Modular architecture for quantum information processing”. Sept 2017. (advisors: Mazyar Mirrahimi and Pierre Rouchon).

8.2.3. *Juries*

Mazyar Mirrahimi was a member the PhD defense committees of Serguei Fedortchenko (Jury president, University Paris Diderot).

Pierre Rouchon was a referee for the PhD thesis of Muhammad Emzi, Australian National University, and for the Habilitation thesis of Marco Caponigro, UMPC.

Alain Sarlette was a jury member for the PhD of Stavros Lopatzidis (UGent, Belgium) and of Bram Vervisch (UGent, Belgium).

8.3. Popularization

Mazyar Mirrahimi has been interviewed by Le Monde for a dossier on quantum information.

Mazyar Mirrahimi gave an invited talk on “Quantum computing” at the CRiP’s ITES Innovation Summit at Deauville, France in Mars 2017.

Mazyar Mirrahimi gave an invited talk on “Quantum computing” at X-Creation (X-Drahi) in May 2017.

Pierre Rouchon was invited to give a talk "Contrôle des systèmes: du classique au quantique", Journée d'inauguration du programme PSL-maths, 19 October 2017 at ENS-Paris.

Alain Sarlette has been speaking at inria-organized dissemination events:

- 03/07 "fresh from the labs" talk about quantum technology hardware (at Boston Consulting Group, Paris – team gamma)
- 06-08/06 Keynote speech at Journées DGGT
- 10/07 presentation at inria-Paris-labs visit by high-level managers and stakeholders

Alain Sarlette is answering questions about quantum control and quantum computing on the website "ik-heb-een-vraag.be" where Flemish layman can ask questions to scientific experts.

SIERRA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

- P. Germain and F. Bach: co-organization of NIPS workshop: "(Almost) 50 Shades of Bayesian Learning: PAC-Bayesian trends and insights" <https://bguedj.github.io/nips2017/50shadesbayesian.html>
- A. d'Aspremont: co-organization of the workshop: "Optimization and Statistical Learning", Les Houches, France

9.1.1.1. Member of the Organizing Committees

- F. Bach: Senior Area chair for NIPS 2017

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

- F. Bach: Action Editor, Journal of Machine Learning Research.
- F. Bach: Information and Inference, Associate Editor.
- F. Bach: Electronic Journal of Statistics, Associate Editor.
- F. Bach: Mathematical Programming, Associate Editor.
- F. Bach: Foundations of Computational Mathematics, Associate Editor.
- A. d'Aspremont: SIAM Journal on Optimization, Associate Editor.

9.1.3. Invited Talks

- F. Bach: Workshop on Shape, Images and Optimization, Muenster, Germany invited talk, February 2017
- F. Bach: SIAM conference on Optimization, Vancouver, Canada, invited tutorial, May 2017
- F. Bach: LCCC workshop on Large-Scale and Distributed Optimization, Lund, Sweden, invited talk, June 2017
- F. Bach: Summer school on Structured Regularization for High-Dimensional Data Analysis, Paris, invited talk, June 2017
- F. Bach: FOCM Barcelona, two invited talks in special sessions, July 2017
- F. Bach: European Signal Processing conference (EUSIPCO), Kos, Greece, keynote speaker, August 2017
- F. Bach: StatMathAppli 2017, Frejus, mini-course on optimization, September 2017
- F. Bach: 2017 ERNSI Workshop on System Identification, Lyon, invited plenary talk, September 2017
- F. Bach: New-York University, Data science seminar, October 2017
- F. Bach: Workshop on Generative models, parameter learning and sparsity, Cambridge, UK, invited talk, November 2017
- F. Bach: NIPS workshops, two invited talks, Long Beach, CA, December 2017
- A. d'Aspremont: "Regularized Nonlinear Acceleration"
 - GdR MOA, Bordeaux.
 - GdR MEGA, Paris.

- SIAM OPTimization conference
- Oxford computational math seminar
- Alan Turing institute
- A. d’Aspremont: “Sharpness, Restart and Acceleration”. Foundations of Computational Mathematics, Barcelona.
- P. Germain: “Generalization of the PAC-Bayesian Theory, and Applications to Semi-Supervised Learning”, Modal Seminars, Lille, France, January 2017
- P. Germain: “Theory Driven Domain Adaptation Algorithm”, Google Brain TechTalk, Mountain View (CA), USA, April 2017
- P. Gaillard: “Sparse acceleration of exponential weights”
 - Seminar of the SEQUEL project team, Lilles, February 2017
 - 49e Journées Françaises de Statistique, Avignon, Juin 2017
- P. Gaillard: “Obtaining sparse and fast convergence rates online under Bernstein condition”, CWI-Inria Workshop, September 2017
- P. Gaillard: “Online nonparametric learning”
 - Cambridge Statistics Seminar, October 2017
 - Statistics Seminar of the University Aix-Marseille, December 2017

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Master: A. d’Aspremont, “Optimization”, 21h, M1, Ecole Normale Supérieure, France

Master: A. d’Aspremont, “Optimization”, 21h, M2 (MVA), ENS Cachan, France

Master: F. Bach and P. Gaillard, “Apprentissage statistique”, 35h, M1, Ecole Normale Supérieure, France.

Master: F. Bach (together with G. Obozinski), “Graphical models”, 30h, M2 (MVA), ENS Cachan, France.

Master: F. Bach, “Optimisation et apprentissage statistique”, 20h, M2 (Mathématiques de l’aléatoire), Université Paris-Sud, France.

Master: F. Pedregosa (together with Fajwel Fogel), “Introduction to scikit-learn”, M2 (MASH), Université Paris-Dauphine, France.

9.2.2. Supervision

- PhD: Nicolas Flammarion, July 2017, co-directed by Alexandre d’Aspremont and Francis Bach.
- PhD: Aymeric Dieuleveut, September 2017, directed by Francis Bach.
- PhD: Christophe Dupuy, June 2017, directed by Francis Bach.
- PhD: Rafael Rezende, December 2017, Francis Bach, co-advised with Jean Ponce.
- PhD: Vincent Roulet, December 2017, directed by Alexandre d’Aspremont.
- PhD in progress: Damien Scieur, started September 2015, co-directed with Alexandre d’Aspremont and Francis Bach
- PhD in progress: Antoine Recanati, started September 2015, directed by Alexandre d’Aspremont
- PhD in progress: Anaël Bonneton, started December 2014, co-advised by Francis Bach, located in Agence nationale de la sécurité des systèmes d’information (ANSSI).
- PhD in progress: Dmitry Babichev, started September 2015, co-advised by Francis Bach and Anatoly Judistky (Univ. Grenoble).

- PhD in progress: Tatiana Shpakova, started September 2015, advised by Francis Bach.
- PhD in progress: Loucas Pillaud-Vivie, started September 2017, co-directed by Alessandro Rudi and Francis Bach
- PhD in progress: Margaux Brégère, started September 2017, co-advised by Pierre Gaillard, Gilles Stoltz and Yannig Goude (EDF R&D)

9.3. Popularization

- A. d'Aspremont: Paris Science et Data, PSL & Inria.
- A. d'Aspremont: Journée innovation défense
- P. Gaillard: testimony for EDF fellows day

ANGE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organising Committees

Y. Penel and J. Sainte-Marie organised (with E. Fernández-Nieto) the workshop “An overview on free-surface flows” that took place at Inria on November 13th-14th and that gathered 35 researchers (from France, US, Italy, Spain).

B. Di Martino, J. Sainte-Marie and A. Mangeney organised the 5th EGRIN summer school that took place at Cargèse from May, 29th to June, 2nd and that gathered 40 researchers.

E. Audusse was a member of the organising committee of the 8th edition of the conference “Finite-Volume for Complex Applications” (June, 12th to 16th, Lille).

M. Parisot organises the monthly ANGE seminar. The program for 2017 comprises: H. Martin (Jan), J. Sainte-Marie (Feb), V. Desveaux (Mar), V. Mallet (Apr), B. Al Taki (Sep), C. Cancès (Oct), R. Ventura (Nov), V. Duchêne (Dec).

J. Salomon co-organises the LJLL-Inria meetings (twice a month). L. Boittin co-organises the Junior Seminar at Inria–Paris.

E. Audusse, C. Guichard and Y. Penel organised the welcome session for newly recruited researchers in mathematics on behalf of national research institutions (CNRS, Inria, SFdS, SMAI, SMF) on January, 23rd.

We finally mention that M. Parisot and J. Salomon will organise a workshop entitled “Scientific computing and optimisation processes for renewable energies” at Inria on January 2018.

10.1.2. Journal

10.1.2.1. Reviewer - Reviewing Activities

Member	Journal
E. Audusse	M2AN, Water
C. Guichard	Springer Proc. Math., CRAS Mathematiques, Journal of Scientific Computing, Computers and Mathematics with Applications, Journal of Computational Physics, Numerical Methods for Partial Differential Equations
V. Mallet	JAMES, Atmospheric Environment
A. Mangeney	JGR, GRL, GJI
M. Parisot	ESAIM:ProcS, Springer Proc. Math., M2AN
Y. Penel	Springer Proc. Math., Journal of Computational Physics
J. Sainte-Marie	M2AN, Applied Mathematical Modelling, IJNMF, ANR, Journal of Scientific Computing
J. Salomon	CRAS, SIAM SISC, JMPA

10.1.3. Invited Talks

Conference	Location	Month	Members involved
Earth Sciences	Durham (UK)	January	A. Mangeney
DD24	Svalbard (Norway)	February	J. Salomon
Workshop on reduced order methods for wind and marine current power	Nice	February	J. Salomon
Entreprises pour l'environnement	Paris	March	V. Mallet
Clifford lectures	New-Orleans (USA)	April	J. Sainte-Marie
EGRIN (5th summer school)	Cargèse	June	E. Audusse, L. Boittin, A. Mangeney, M. Parisot, Y. Penel
SMAI 2017	Ronce-les-Bains	June	F. Wahl
Forecasting and risk management for renewable energy	Paris	June	V. Mallet
EGU Meeting "Environmental Seismology"	Ohlstadt (Germany)	June	A. Mangeney
InterNoise	Hong-Kong	August	V. Mallet
SIAM GS 2017	Erlangen (Germany)	September	E. Audusse, L. Boittin, F. Wahl
ENUMATH	Voss (Norway)	September	J. Salomon
Euromech colloquium 588	Toulouse	October	L. Boittin
Workshop EDP-Normandie	Caen	October	F. Wahl
Workshop on numerical schemes for low Mach number flows	Toulouse	November	Y. Penel
UMEMA	Torino (Italy)	November	V. Mallet
Numerical Methods for Shallow Water Equations and Related Models	Shenzhen (China)	November	J. Sainte-Marie
NumWave	Montpellier	December	E. Audusse, M. Parisot
Seminars	Date	Member	
Clermont-Ferrand (Blaise Pascal)	January	B. Di Martino	
Bordeaux (MathOcean)	February	E. Audusse, M. Parisot	
Marne-la-Vallée (ENPC)	February	V. Mallet	
Orléans (BRGM)	April	A. Mangeney	
Tokyo (Earthquake Research Institute)	October	A. Mangeney	
Saclay (CEA-LSCE)	October	V. Mallet	

10.1.4. Leadership within the Scientific Community

Organisation	People	Duty
AMIES	E. Godlewski	Member of board
ANR	V. Mallet	Expert
CEREMADE lab council	J. Salomon	Member
CFEM	E. Godlewski	Director
EGRIN	E. Audusse	Correspondent (Paris 13)
	B. Di Martino	Correspondent (Corse)
	N. Goutal	Correspondent (EDF)
	C. Guichard	Correspondent (UPMC)
	B. Haspot	Correspondent (CEREMADE)
	A. Mangeney	Member of board
	M. Parisot	Correspondent (ANGE)
	J. Sainte-Marie	Scientific head
HCERES	A. Mangeney	Expert
LJLL	E. Godlewski	Deputy director
SMAI	Y. Penel	Member of board

A. Mangeney was a member of the hiring panel for a full professor position at Univ. Grenoble Alpes.

We also mention that V. Mallet and M. Parisot are members of the Inria committee of doctoral monitoring and that J. Salomon is in the committee for the next location of the centre Inria Paris (rue Barrault).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

PhD degree - J. Salomon, Variational inequalities, 6 hours (lectures), Mines ParisTech

Master's degree (M2) - E. Godlewski and J. Sainte-Marie, Hyperbolic models for complex flows and energy applications, 25 hours (lectures), Univ. Pierre et Marie Curie Paris 6

Master's degree (M2) - C. Guichard, Numerical methods for nonstationary PDEs, 6 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M2) - A. Mangeney and J. Sainte-Marie, Numerical methods in geosciences, 60 hours (lectures and programming classes), Univ. Paris Diderot Paris 7, IPGP

Master's degree (M2) - B. Di Martino, Mathematical modelling, 21 hours (lectures, example and programming classes), Univ. Corse

Master's degree (M2) - J. Salomon, Numerical methods for PDEs, 45 hours (lectures), Univ. Paris Dauphine

Master's degree (M2)- Y. Penel, Deterministic models in life sciences, 30h (lectures, example and programming classes), Univ. Paris Descartes

Master's degree (M2) - V. Mallet, Modelling of air quality, 4.5h (lectures), ENPC

Master's degree (M2) - V. Mallet, Simulation of atmospheric dispersion, 3h (programming classes), ENPC

Master's degree (M2) - V. Mallet, Data assimilation in geophysics, 7h (programming classes), ENPC

Engineering school (2nd year) - E. Audusse, ODEs: analysis and numerical simulation, 30 hours (lectures and example classes), Univ. Paris 13

Engineering school (2nd year) - E. Audusse, Finite difference method for PDEs, 21 hours (lectures), Univ. Paris 13

Master's degree (M1) - C. Guichard, Basis of numerical methods, 63 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Master's degree (M1) - A. Mangeney and J. Sainte-Marie, Modelling of gravity flows, 80 hours (lectures), Univ. Paris Diderot Paris 7, IPGP

Master's degree (M1) - B. Di Martino, Finite element methods, 18 hours (lectures and example classes), Univ. Corse

Master's degree (M1) - B. Di Martino, Risk modelling, 33 hours (lectures and example classes), Univ. Corse

Master's degree (M1) - J. Salomon, Numerical methods for PDEs, 85 hours (lectures and example classes), Univ. Paris Dauphine

Engineering school (1st year) - E. Audusse, Introduction to scientific computing, 30 hours (lectures and example classes), Univ. Paris 13

Bachelor's degree (L3) - L. Boittin and C. Guichard, Numerical methods for ODEs, 101.5 hours (example and programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L3) - C. Guichard, Python, 21 hours (programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L3) - B. Di Martino, Linear numerical analysis, 54 hours (lectures and example classes), Univ. Corse

Bachelor's degree (L2) - B. Di Martino, Analysis, 54 hours (lectures and example classes), Univ. Corse

Bachelor's degree (L2) - Y. Penel and F. Wahl, Integration in 2 and 3 dimensions, 31 hours (lectures and example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L2) - C. Guichard, Some numerical approximations, 17 hours (lectures and programming classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1-L2) - B. Al Taki, Analysis and algebra, 12 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1-L2) - Y. Penel, Linear algebra, ODEs, elementary probabilities, 20 hours (example classes), Univ. Pierre et Marie Curie Paris 6 (Roscoff)

Bachelor's degree (L1) - B. Di Martino, Mathematics, 18 hours (lectures and example classes), Univ. Corse

Bachelor's degree (L1) - F. Wahl, Sequences and integrals, linear algebra, 54 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1) - L. Boittin, Calculus, 38 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Bachelor's degree (L1) - L. Boittin, Linear algebra, 18 hours (example classes), Univ. Pierre et Marie Curie Paris 6

Some members are responsible of educational pathways:

E. Audusse is the deputy director of the "Applied Mathematics and Scientific Computing" program of the SupGalilee engineering school.

E. Godlewski is the head of the "Mathematics for Industry" M.Sc. program of Univ. Pierre et Marie Curie Paris 6.

C. Guichard is the associated head of the "Mathematics and Programming" B. program of Univ. Pierre et Marie Curie Paris 6.

10.2.2. Supervision

PostDoc in progress - Bilal Al Taki, *Well-posedness multilayers Saint-Venant equation*, Inria, supervised by J. Sainte-Marie, B. Haspot and B. Di Martino, from 2017

PostDoc in progress - Guillaume Chérel, *Data assimilation for urban pollution*, Inria, supervised by V. Mallet, from 2016

PostDoc in progress - Virginie Durand, *Analysis of rockfalls and generated seismic signals at La Réunion*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney, from 2014

PostDoc in progress - Jannelle Hamond, *Uncertainty quantification applied to air quality simulation at urban scale*, Inria, supervised by V. Mallet, from 2017

PostDoc in progress - El Hadji Kone, *Numerical modelling of two-phase flows*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with G. Narbona-Reina and E. Fernández-Nieto), from 2014

PostDoc in progress - Pierre-Olivier Lamarre, *Optimisation of the hydrodynamic regime in a raceway and lagrangian trajectories of algae*, Inria, supervised by J. Sainte-Marie (in collaboration with O. Bernard, BIOCORE), from 2016

PostDoc in progress - Sylvain Viroulet, *Numerical modelling of granular flows and generated forces on the topography*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney, from 2016

PhD - Do Minh Hieu, *Analyse mathématique et schémas volumes finis pour la simulation des écoulements quasi-géostrophiques à bas nombre de Froude*, Univ. Paris 13, supervised by E. Audusse and Y. Penel (in collaboration with S. Dellacherie and P. Omnes), defended on Dec. 17

PhD - Jean Thorey, *Prévision d'ensemble par agrégation séquentielle appliquée à la prévision de production d'énergie photovoltaïque*, Inria grant, supervised by V. Mallet (in collaboration with I. Herlin), defended on Sept. 17

PhD in progress - Frédéric Allaire, *Quantification du risque incendie par méta-modélisation de la propagation de feux de forêt*, Inria grant, supervised by V. Mallet and J. Sainte-Marie, from 2017

PhD in progress - Vincent Bachelet, *Granular flows and generated acoustic waves: a laboratory investigation*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with J. De Rosny and R. Toussaint), from 2015

PhD in progress - Léa Boittin, *Modelling, analysis and efficient numerical resolution for erosion processes*, Univ. Pierre et Marie Curie Paris 6 (Inria grant), supervised by E. Audusse, M. Parisot and J. Sainte-Marie, from Jan. 16

PhD in progress - Pauline Bonnet, *Vers un catalogue des vélages d'icebergs en région polaire par une approche couplée sismologie et modélisation mécanique*, Institut de Physique du Globe (Univ. Paris 7) & ENSAM-ParisTech, supervised by A. Mangeney (in collaboration with O. Castelnau and V. Yastrebof), from 2017

PhD in progress - Ruiwei Chen, *Uncertainty quantification in the simulation of traffic emissions*, ENPC, supervised by V. Mallet (in collaboration with V. Aguiléra, K. Sartelet), from 2014

PhD in progress - Virgile Dubos, *Numerical methods for the elliptic/parabolic parts of non-hydrostatic fluid models*, Univ. Pierre et Marie Curie Paris 6, supervised by C. Guichard, Y. Penel and J. Sainte-Marie, from 2017

PhD in progress - Nadia Jbili, *Contrôle optimal pour la résonance magnétique nucléaire*, Univ. Paris Dauphine, supervised by J. Salomon, from 2017

PhD in progress - Julian Kühnert, *Simulation of high frequency seismic waves*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney, from 2016

PhD in progress - Antoine Lesieur, *Estimation d'état et modélisation inverse appliquées à la pollution sonore en milieu urbain*, Inria grant, supervised by V. Mallet and J. Sainte-Marie, from 2017

PhD in progress - Hugo Martin, *Simulation of the coupling between seismic waves and granular flows*, Institut de Physique du Globe (Univ. Paris 7), supervised by A. Mangeney (in collaboration with Y. Maday), from 2016

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

PhD in progress - Nourelhouda Omrane, *Mathematical analysis and control of free-surface flows in variable domains*, Univ. Corse, supervised by B. Di Martino, from 2016

PhD in progress - Marc Peruzzetto, *Hazard assessment related to gravitational flows: from modelling to risk analysis*, Institut de Physique du Globe (Univ. Paris 7) & BRGM, supervised by A. Mangeney (in collaboration with G. Grandjean), from 2017

PhD in progress - Pierrick Quémar, *3D numerical simulations of environmental hydrolics: application to Telemac*, Univ. Paris 13, supervised by E. Audusse and N. Goutal (in collaboration with A. Decoene, O. Lafitte, A. Leroy and C. Tuân Phan), from 2016

PhD in progress - Sebastian Reyes-Riffo, *Mathematical methods for recovering marine energies*, Univ. Paris Dauphine, supervised by J. Salomon, from 2016

PhD in progress - Raphaël Ventura, *Estimation de la pollution sonore en milieu urbain par assimilation d'observations mobiles*, Inria grant, supervised by V. Mallet (in collaboration with I. Herlin), from 2014

PhD in progress - Fabien Wahl, *Modelling and analysis of interactions between free surface flows and floating objects*, Univ. Pierre et Marie Curie Paris 6, supervised by C. Guichard, E. Godlewski, M. Parisot and J. Sainte-Marie, from 2015

M2 internship - M Hamed Bouchiba, *Obtention du modèle Saint-Venant et stabilité des solutions faibles d'un système Navier-Stokes compressible*, Univ. Pierre et Marie Curie Paris 6, supervised by B. Di Martino and B. Haspot, Summer 2017

M2 internship - Anthony Guimpier, *Analyse d'instabilités gravitaires sur Mars*, IPGP, supervised by A. Mangeney (in collaboration with S. Conway, N. Mangold), Summer 2017

M2 internship - Ani Miraçi, *Formulation et étude numérique de la partie elliptique d'un problème couplé issu de la géophysique*, Univ. Pierre et Marie Curie Paris 6, supervised by C. Guichard, Y. Penel and J. Sainte-Marie, Summer 2017

M2 internship - Pablo Poulain, *Granular flows simulation and application to volcanic flank collapse*, IPGP, supervised by A. Mangeney (in collaboration with A. Le Friand, G. Boudon), Summer 2017

M2 internship - Laurie Supperamaniyen, *Dynamique éruptive du Piton de La Fournaise à partir d'enregistrements sismiques continus sur quelques éruptions*, IPGP, supervised by A. Mangeney (in collaboration with S. Vergnolle), Summer 2017

L3 internship - Jeanne Trinquier, *Tsunamath : module pédagogique présentant les travaux de modélisation et de simulation des tsunamis*, supervised by E. Audusse and J. Sainte-Marie, Summer 2017

10.2.3. Juries

Jan., PhD - J. Sainte-Marie: Amélie Simon (E. Centrale Lyon, *Modélisation des phénomènes de films liquides dans les turbines à vapeur*)

Feb., PhD - Y. Penel: Arthur Talpaert (École Polytechnique, *Simulation numérique directe de bulles sur maillage adaptatif avec algorithmes distribués*)

Mar., PhD - J. Sainte-Marie (referee): Nabil El Mocayd (Cerfacs – Univ. Toulouse, *La décomposition en polynôme du chaos pour l'amélioration de l'assimilation de données ensembliste en hydraulique fluviale*)

- Mar., PhD - A. Mangeney (referee): Perrine Freydisier (Univ. Grenoble Alpes – IRSTEA, *Dynamique interne au front d'écoulements à surface libre. Application aux laves torrentielles*)
- May, PhD - J. Salomon: Francesc Fàbregas Flavià (École Centrale Nantes, *A Numerical Tool for the Frequency Domain Simulation of Large Clusters of Wave Energy Converters*)
- May, PhD - V. Mallet: Chi Vuong NGuyen (École Centrale Lyon, *Assimilation de données et couplage d'échelles pour la simulation de la dispersion atmosphérique en milieu urbain*)
- Sept., PhD - V. Mallet: Jean Thorey (Univ. Pierre et Marie Curie, *Prévision d'ensemble par agrégation séquentielle appliquée à la prévision de production d'énergie photovoltaïque*)
- Nov., PhD - J. Sainte-Marie (president): Charles Demay (Univ. Grenoble Alpes, *Modélisation et simulation des écoulements transitoires diphasiques eau-air dans les circuits hydrauliques*)
- Nov., PhD - A. Mangeney (president): Thao Trinh (Univ. Rennes 1, *Mécanisme d'érosion et de déposition de l'écoulement granulaire sur un fond meuble*)
- Dec., PhD - A. Mangeney (president): Julien Brondex (Univ. Grenoble Alpes – IGA, *Influence de l'endommagement et du frottement basal sur la dynamique de la ligne d'échouage*)
- Dec., PhD - A. Mangeney: Alexis Bougouin (Institut National Polytechnique de Toulouse, *Étude expérimentale de l'effondrement d'une colonne fluide-grains*)
- Dec., PhD - C. Guichard: Riad Sanchez (IFPEN – Univ. Paris-Saclay, *Techniques de bases réduites pour les écoulements diphasiques en milieux poreux*)
- Dec., PhD - J. Sainte-Marie (referee): Athmane Bakhta (Univ. Paris-Est, *Modèles mathématiques et simulation numérique de dispositifs photovoltaïques*)
- Dec., PhD - B. Di Martino: Réjane Fieschi (Univ. Corse, *Résolution d'équations d'ondes en dimension quelconque*)
- Dec., PhD - E. Audusse and Y. Penel: Do Minh Hieu (Univ. Paris 13, *Analyse mathématique de schémas volume finis pour la simulation des écoulements quasi-géostrophiques à bas nombre de Froude*)

10.3. Popularisation

- April - V. Mallet participated to the workshop Smart Cities organised by *Le Monde* in Lyon
- May - L. Boittin and R. Ventura ran a stand on the occasion of the “salon de la culture et des jeux mathématiques” on behalf of AMIES
- June - V. Mallet and R. Ventura helped the organising committee of the “noise walk” in Helsinki (as well as the November edition)
- June-July - J. Trinquier's internship was dedicated to the development of an educational tool based on Tsunamath which incorporates modelling and simulation (supervision by E. Audusse and J. Sainte-Marie)
- October - E. Audusse got involved in a TPE for students in 1^{re} S
- November - R. Ventura provided an association in Paris with noise reports
- November - Y. Penel ran a stand during the ONISEP exhibition
- December - L. Boittin, Y. Penel and F. Wahl helped the organisation at the “Math. Employment” show

ARAMIS Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- S. Durrleman was co-chair of the 6th international workshop on the Mathematical Foundations of Computational Anatomy (MFCA) in Quebec City on September 14.

10.1.1.2. Member of the Organizing Committees

Fabrizio De Vico Fallani is member of the scientific board for the ICM conferences

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

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

O. Colliot was a member of the program committee of SPIE Medical Imaging conference.

F. De Vico Fallani was member of the program committee of the Satellite on Brain networks, International Conference on Network Science (NetSci), Indianapolis, US, 2017

F. De Vico Fallani was member of the program committee of 5th International Workshop on Complex Networks and their Applications, Lyon, France, 2017

S. Epelbaum was a member of the French medical board on the management of Early phase Alzheimer's Disease, Issy les moulineaux, France, 2017

10.1.2.2. Reviewer

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

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

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

S. Durrleman is associate editor of IEEE Transactions on Medical Imaging (TMI)

10.1.3.2. Reviewer - Reviewing Activities

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

S. Epelbaum acted as a reviewer for Alzheimer's & Dementia and the Journal of Alzheimer's disease.

A. Bertrand acted as a reviewer for European Radiology, Journal of Magnetic Resonance Imaging, Journal of Neuroradiology.

F. De Vico Fallani acted as a reviewer for Cerebral Cortex, Brain Topography, IEEE TBME/TNRSE, Neuroimage, Sci Rep, Brain Connectivity, PLOS ONE

10.1.4. Invited Talks

A. Bertrand gave an invited lecture at the French-Quebecois Colloquium of the National Academy of Medicine "Towards news preventive and therapeutic strategies for neurodegenerative diseases: the role of imaging" in Québec City, Québec, september 2017.

F. De Vico Fallani gave an invited lecture at the international workshop on complex networks in Lipari, Italy, september 2017.

F. De Vico Fallani gave an invited lecture at the Neuroscience School of Advanced Studies in Siena, Italy, April 2017.

O. Colliot gave an invited lecture at the ICM/Supelec Workshop 2017.

S. Durrleman gave an invited lecture at the BIOVISION congress in Lyon.

S. Durrleman gave an invited lecture at the conference “Topological and Geometrical Science of Information” at Centre International de Rencontre Mathématiques, Luminy

S. Durrleman gave an invited lecture for the “diplôme inter-universitaire: diagnostic et prise en charge de la Maladie d’Alzheimer et apparentée”, Lille

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

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

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

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

Master: Stéphane Epelbaum, Master in Neuroscience, 4 hours (eqTD), Université Pierre et Marie Curie

Master: S. Durrleman, Master 2 “Mathematics, Vision and Learning”, 31,5 jours (eqTD), ENS Paris-Saclay

Engineering school: Olivier Colliot, 3 hours (eqTD), Mines ParisTech

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

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

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

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

Medical school: Anne Bertrand gives lectures in Neuroimaging of degenerative diseases and normal aging for residents in Radiology and Neurology, for Radiology technicians, for License students in Orthophony, and in various "University Diploma" medical programs (Neurogeriatrics, Neuroradiology, Alzheimer’s Disease and related disorders, Neurovascular Imaging, Emergency-Stroke, Neuroresuscitation), for a total of 50 hours a year.

Medical school: Stéphane Epelbaum gives lectures in Neurology on the topic of degenerative diseases for medical students of the UPMC (10 hours/year) and is regional supervisor of the national Inter University Diploma on Alzheimer’s disease and Related disorders for Paris since 2015.

10.2.2. Supervision

PhD in progress : Giulia Bassignana, “Identification of driver nodes in biological networks”, Inserm, started in 2017, advisors: Fabrizio De Vico Fallani, Olivier Colliot, Violetta Zujovic

PhD in progress : Tiziana Cattai, “Leveraging brain connectivity networks to detect mental states in brain-computer interfaces”, Inria, started in 2017, advisor: Fabrizio De Vico Fallani

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

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

PhD Cifre in progress : Fanny Grosselin, “Fouille des données EEG et suivi longitudinal grande échelle pour le diagnostic et la prédiction du niveau de stress chez l’homme”, EDITE Université Pierre et Marie Curie, started in 2016, advisors: Fabrizio De Vico Fallani and Mario Chavez,

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

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

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

PhD in progress: Pascal Lu, “Machine learning from multimodal genetic and neuroimaging data for personalized medicine”, Université Pierre et Marie Curie, Started 2016, advisor: O. Colliot

PhD in progress: Wen Wei, “Learning brain alterations in multiple sclerosis from multimodal neuroimaging data”, Université de Nice Sophia-Antipolis, Started 2016, advisors: N. Ayache, O. Colliot and S. Durrleman

PhD in progress: Alexandre Bône, “Learning methods for the spatiotemporal analysis of longitudinal image data : application to the diagnosis, prognosis and monitoring of Alzheimer’s disease”, started 2016, advisors: O. Colliot and S. Durrleman

PhD in progress: Manon Ansart, “Automatic recommendation systems built on the statistical exploitation of longitudinal medical data sets”, started 2016, advisors: D. Dormont and S. Durrleman

PhD in progress: Maxime Louis, “Learning spatiotemporal trajectories of iconic-geometric data sets”, started 2016, advisors: S. Durrleman

PhD in progress: Igor Koval, “Construction of disease progression models from multimodal longitudinal data”, started 2016, advisors: S. Allasonnière and S. Durrleman

PhD in progress: Raphael Couronné, “Spatiotemporal analysis of the progression of the Parkinson’s Disease informed by multimodal longitudinal data”, advisor: S. Durrleman

PhD in progress: Thomas Lartigue, “Mixture Models in Gaussian Graphical Models”, advisors: S. Allasonnière and S. Durrleman

10.2.3. *Juries*

Olivier Colliot participated, as referee, to the PhD committee of Elaheh Moradi (TU Finland) (supervisor: J. Tohka).

Olivier Colliot participated, as examiner, to the HdR committee of Roberto Toro (Institut Pasteur).

Anne Bertrand participated, as examiner, to the PhD committee of Clémence Duffant (Université Paris Sud), 2017 (supervisor: Marc Dhenain).

S. Durrleman participated, as examiner, to the PhD committees of Jean Dumoncel (Université Paul Sabatier, Toulouse) and Pierre Roussillon (Université Paris Descartes).

10.3. Popularization

With the precious help of the communication department of the ICM, ARAMIS prepared and presented games on brain data analysis at the "Fête de la Science" 2017.

Fabrizio De Vico Fallani was invited speaker at the Neuroplanete conference held in Nice 2017. In that occasion, a live BCI experiment has been presented to the public. This event has been reported by France 3.

Fabrizio De Vico Fallani was invited speaker at the Palais Decouverte in Paris for the theme "Vers le meilleur des mondes" 2017.

Olivier Colliot was invited speaker at the Palais Decouverte in Paris for the theme "Vers le meilleur des mondes" 2017.

Stanley Durrleman and Stéphane Epelbaum were invited speakers at the "Open Brain Bar: Artificial intelligence and Alzheimer's disease" event organized by the ICM in Paris 2017.

Olivier Colliot was invited speaker for the "Olympiades académiques de mathématiques", Paris, 2017.

S. Durrleman gave a presentation for the 50th anniversary of Inria featuring 50 ERC laureates

S. Durrleman gave two interviews for the magazine Sciences et Avenir (1 video interview, one article)

S. Durrleman and S. Epelbaum took part in the program "Priorité Santé" of the radio Radio France International

S. Durrleman gave a video interview for FrenchWeb.fr

S. Durrleman gave a talk at the event S3 Odéon (www.s3odeon.fr)

ARAMIS was featured in a video of the Agence France Presse (AFP)

MAMBA Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

Editorial activities, scientific boards, research administration

P.-A. Bliman is member of the Scientific committee of the ANR program “Environnement, pathogènes et maladies émergentes ou ré-émergentes - One health”.

J. Clairambault is member of the expert group of ITMO Cancer, representative of Inria (since 2008) and member of the bureau of the interdisciplinary doctoral programme “Interfaces pour le Vivant” (IPV) at Sorbonne Université.

M. Doumic is member of the expert group of ITMO BMSV, representative of Inria (since 2014).

D. Drasdo is head of a research team, until June 2017 co-localised at Interdisciplinary Center for Bioinformatics, Univ. Leipzig, and since July 2017 co-localised at Leibniz Institute for Work-environment IfADo, Dortmund. He is member of the boards of TheScientificWorldJOURNAL and Royal Society open science (UK), J. Theor. Biol. and member of CaSyM expert committee for EU Horizon 2020.

B. Perthame is Chief Editor of Acta Applicandæ Mathematicæ (Springer-Nature) (since october 2017), Editor of De Gruyter Series in Mathematics and Life Sciences and of Frontiers in Mathematical Sciences (Birkhäuser), and member of the scientific board for the ECMTB Conference 2018.

9.2. Teaching - Supervision - PhD and HDR defence committees

9.2.1. Teaching

We indicate here only the courses given by scientific staff members who do not have a teaching position. Benoît Perthame gives courses at UPMC.

Luis Ameida is in charge of the Major MathBio of the speciality “Mathematics of modelling”, M2 level, UPMC.

- *Luis Almeida, 2017*
Tissue growth (with Delphine Salort, IBPS). UPMC M2 course, Paris **20 h**
- *Pierre-Alexandre Bliman, 2017*
Analysis, Graduate cycle, School of Applied Mathematics, Fundação Getulio Vargas, Rio de Janeiro, Brazil **60 h**
and Calculus III, Graduate cycle, School of Applied Mathematics, Fundação Getulio Vargas, Rio de Janeiro, Brazil **30 h**
and Control theory, Graduate cycle, School of Industrial Management, Université Mohamed 6 Polytechnique, Ben Guerir, Morocco **6 h**
- *Jean Clairambault, 2017*
International course on stem cells, UPMC, September 2017 **2 h**
and Spring school on systems biology, Instituto Gulbenkian de Ciência, Lisbon, May 2017 **6 h**
- *Marie Doumic, 2017*
Direct and inverse problems in population dynamics (with P. Moireau, Inria M3DISIM). UPMC M2 course, Paris **24 h / yr**
- *Dirk Drasdo, 2017*

Agent-based models of tissue organisation, UPMC M2 course, Paris **24 h / yr**

University of Rome: Tutorial, 2h: TiSim: A modelling tool for multicellular simulations

9.2.2. Supervision

9.2.2.1. PhD defences in 2017

- Aurora Armiento, “Inverse problems and data assimilation methods applied on protein polymerisation”, UPMC, begun September 2013, supervision by M. Doumic and Ph. Moireau (Inria Saclay, M3DISIM team), PhD defence January 2017, UPMC
- Giulia Fabrini “Numerical methods for optimal control problems with biological applications”, supervision by L. Almeida and P. Bagnnerini (University of Genova, Italy), PhD defence April 2017, Univ. Genova
- Walid Djema, “Understanding Cell Dynamics in Cancer from Control and Mathematical Biology Standpoints: Particular Insights into the Modelling and Analysis Aspects in Hematopoietic Systems and Leukemia”, supervision by C. Bonnet (DISCO, Saclay), J. Clairambault, and F. Mazenc (DISCO, Saclay), PhD defence November 2017, L2S, Gif/Yvette

9.2.2.2. Ongoing PhD theses

- PhD in progress: Noémie Boissier (since November 2013, PhD defence in February 2018), supervision by D. Drasdo and I. Vignon-Clementel
- PhD in progress: Julia Delacour (since September 2017), supervision by Marie Doumic and Christian Schmeiser (WPI, Vienna)
- PhD in progress: Adrian Friebel, “Software of image processing and analysis of liver tissue at histological scales”, supervision by D. Drasdo and S. Hoehme
- PhD in progress: Ghassen Haddad, “Optimisation of cancer treatments”, UPMC in co-tutela with ENIT Tunis, begun October 2015, supervision by J. Clairambault and S. Ben Miled (Tunis)
- PhD in progress: Hugo Martin, “New structured population models for bacterial growth”, begun October 2016, supervision by M. Doumic in co-tutela with Pierre Gabriel (Versailles)
- PhD in progress: Mathieu Mézache, begun October 2016, “Oscillatory dynamics in protein aggregation”, supervision by M. Doumic in co-tutela with Human Rezaei (INRA)
- PhD in progress: Johannes Neitsch, “Growth and regeneration modelling based on an agent-based model with deformable cells”, (since June 2011), supervision by D. Drasdo and P. Van Liedekerke
- PhD in progress: Pastor Pérez-Estigarribia, Universidad Nacional de Asunción, Paraguay, supervision by C. Schaerer and P.-A. Bliman
- PhD in progress: Camille Pouchol, “Modelling interactions between tumour cells and adipocytes in breast cancer”, UPMC, begun September 2015, supervision by J. Clairambault, M. Sabbah, and E. Trélat
- PhD in progress: Antonin Prunet, UPMC, begun October 2014, supervision by L. Almeida and M. Sabbah
- PhD in progress: Andrada Quillas Maran, “Modelling early leukaemogenesis”, UPMC, begun March 2014, supervision by J. Clairambault, F. Delhommeau and B. Perthame
- PhD in progress: Martin Strugarek, “Structured population dynamics for transmissible diseases”, UPMC, begun October 2015, supervision by N. Vauchelet and B. Perthame
- PhD in progress: Cécile Taing, UPMC, begun October 2014, supervision by A. Lorz and B. Perthame

9.2.3. PhD and HDR defence committees

- Luis Almeida: Giulia Fabrini, “Numerical methods for optimal control problems with biological applications”, PhD defence April 26, 2017, Genova (Italy)

- Jean Clairambault: Cécile Carrère, “Prise en compte de l’hétérogénéité tumorale dans l’optimisation d’une chimiothérapie : contrôle optimal, analyse théorique et numérique”, PhD defence October 6, 2017, Marseille
- Jean Clairambault: Sébastien Benzekry (HDR), “Contributions in Mathematical Oncology: When Theory Meets Reality”, HDR defence November 13, 2017, Bordeaux
- Jean Clairambault: Walid Djema, “Understanding Cell Dynamics in Cancer from Control and Mathematical Biology Standpoints: Particular Insights into the Modelling and Analysis Aspects in Hematopoietic Systems and Leukemia”, PhD defence November 21, 2017, Gif/Yvette
- Marie Doumic: Aurora Armiento, “Inverse problems and data assimilation methods applied on protein polymerisation”, UPMC, PhD defence January 13, 2017, UPMC
- Marie Doumic: Apollos Besse, “Modélisation mathématique de la leucémie myéloïde chronique”, PhD defence July 6, University Lyon 1
- Marie Doumic: Aline Marguet, “Processus de branchement pour des populations structurées et estimateurs pour la division cellulaire”, PhD defence November 27, 2017, Ecole Polytechnique
- Benoît Perthame: Giulia Fabry, “Numerical methods for optimal control problems with biological applications”, PhD defence April 26, 2017, Genova (Italy)

MYCENAE Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

- **Reprosciences 2017**, April 10-12, Tours, co-organized by Frédérique Clément, Yves Combarnous, Florian Guillou, Joëlle Cohen-Tannoudji and François Vialard.

9.1.2. Journal

9.1.2.1. Member of the Editorial Boards

Jonathan Touboul participates in the editorial boards of *Plos One* and *Frontiers in neuronal circuits*

9.1.2.2. Reviewer - Reviewing Activities

Journal of Ovarian research, *Journal of Mathematical Biology*, *SIAM Journal on Applied Dynamical Systems*

9.1.3. Invited Talks

Frédérique Clément gave a talk dedicated to “Multiscale modeling in reproductive and developmental biology : A middle-out, cell dynamics-based approach” during the **Journées Scientifiques Inria**, June, 14-16, Sophia-Antipolis.

Our study on the analysis and calibration of a linear model for structured cell populations with unidirectional motion was the matter of an invited presentation, given by Romain Yvinec, at the annual meeting of GDR MaMovi , September 27-29, Villeurbanne (<https://gdr-mamovi-2017.sciencesconf.org>).

9.1.4. Scientific Expertise

Frédérique Clément belongs to the expert board of the **BCDE** (Cell Biology, Development and Evolution) ITMO (Multi OrganizationThematic Institute) of the French National Alliance for Life and Health Sciences **Aviesan**.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Frédérique Robin gave lectures in the framework of the UFR de Mathématiques de Jussieu (L2 and L3 level)

UE P2.2M003 Vector analysis (L3) 85h

UE E.2M261 Integer and integral series with parameters (L2), 20h

UE 3M100 Initiation to Python language (L3), 15h

9.2.2. Supervision

PhD in progress : Richard Bailleul. Modeling of the developmental mechanisms underlying the formation of color and appendage patterns in birds, since September 2015. Université Pierre & Marie Curie (ED515), supervisors: Benoît Perthame, Marie Manceau and Jonathan Touboul (funded by the ERC starting grant of Marie Manceau)

PhD in progress: Yi Cui. Role of Pax6 in neurodevelopment: experiments and models, since September 2014, Université Pierre & Marie Curie (ED158), supervisors: Jonathan Touboul, Alain Prochiantz and Alessandra Pierani

PhD in progress: Frédérique Robin. Multiscale modeling of the morphodynamics in ovarian follicles, since October 2016, Université Pierre & Marie Curie (ED386), supervisors: Frédérique Clément and Romain Yvinec (INRA)

Master degree: Matthieu Perez. Simulations de modèles déterministes et stochastiques de la neuro-genèse corticale. INSA Rouen, supervisors: Frédérique Clément and Marie Postel

9.3. Popularization

Frédérique Robin participated in a regional committee in the framework of the “Tournoi français des jeunes mathématiciennes et mathématiciens” (TFJM).

Book chapter in the new edition of the Encyclopedia of Endocrine Diseases

D. Monniaux, V. Cadoret, F. Clément, R. Dalbies-Tran, S. Elis, S. Fabre, V. Maillard, P. Monget, and S. Uzbekova

Editors Ilpo Huhtaniemi and Luciano Martini, Section Editor Sophie Christin-Maitre

Folliculogenesis (2017) p1-26.

REO Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Céline Grandmont
 - Co-organizer of Inria-LJLL meeting in scientific computing
 - Co-organizer of the conference in the honor of Y. Maday for his 60th birthday, may 2017, Roscoff
 - Co-organizer of the conference “Analysis and control of fluid-structure interaction systems”, october 2017, IMB, Bordeaux University
- Irene Vignon Clementel
 - Organized a minisymposium at the ICCB conference, September 2017, Compiègne
 - Organized a minisymposium with A. Marsden (Stanford U.) at the 5th International Conference on Computational & Mathematical Biomedical Engineering, April 2017, Pittsburg, USA.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Laurent Boudin
 - Coordinator of the 6th “Forum Emploi Maths 2017” organizing committee, with Bertrand Michel (École Centrale Nantes), December 2017, Paris, France

10.1.2.2. Member of the Conference Program Committees

- Jean-Frédéric Gerbeau
 - 5th International conference on Computational & Mathematical Biomedical Engineering (CMBE 2017), Pittsburgh, USA.
 - ENUMATH 2017 conference. Voss, Norway.
 - 9th International Conference on Functional Imaging and Modeling of the Heart (FIMH 2017). Toronto, Canada.
- Céline Grandmont
 - Member of the scientific committee of the “EDP Normandie 2017” conference
- Irene Vignon Clementel
 - Programme committee member, Computational and Mathematical Biomedical Engineering Conference, Pittsburgh 2017
 - Conference steering committee, International Conference on Engineering Frontiers in Pediatric and Congenital Heart Disease, 2015-present

10.1.2.3. Reviewer

- Jean-Frédéric Gerbeau
 - Member of the Scientific Program Committee of the Millennium Science Initiative, a program of the Ministry of Economy of Chile.
- Irene Vignon Clementel

- Reviewer for the Netherlands Organisation for Scientific Research (NWO)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Jean-Frédéric Gerbeau
 - Member of the editorial board of the SIAM Journal of Scientific Computing (SISC).
 - Series editor of “SEMA SIMAI Series”, Springer.
 - Member of the editorial board of Journal Advances in Computational Mathematics (ACOM), Springer
 - Member of the editorial board of International Journal for Numerical Methods in Biomedical Engineering (IJNMBE), Wiley.
 - Member of the editorial board of Communications in Applied and Industrial Mathematics, SIMAI/De Gruyter.
 - Member of the editorial board of Journal for Modeling in Ophthalmology, Kugler.
- Marc Thiriet
 - Member of the editorial board of Digital Medicine

10.1.4. Leadership within the Scientific Community

- Jean-Frédéric Gerbeau
 - Elected member of the Board of Directors of SMAI (French Society for Industrial and Applied Mathematics), in charge of the SMAI publications (M2AN, COCV, *etc.*)

10.1.5. Research Administration

- Muriel Boulakia
 - Supervisor of the teaching of mathematics at the engineer school Polytech Paris-UPMC
- Miguel Ángel Fernández Varela
 - Deputy Head of Science, Inria Paris (from Sept. 2017)
 - Member of the Inria Evaluation Committee (from Sept. 2017)
 - Co-president of the Scientific Positions Commission, Inria Paris
- Jean-Frédéric Gerbeau
 - Head of science, Inria Paris (until Sept. 2017)
 - Member of the Inria Evaluation Committee (until Sept. 2017)
 - Member of the scientific committee of Labex NUMEV, Montpellier.
 - Service activity abroad: member of the Reference Committee of the PhD program Mathematical Models and Methods in Engineering (Politecnico di Milano, Italy).
- Céline Grandmont
 - Member of the Inria Evaluation Committee
 - Member of the Inria Parity Committee
- Irene Vignon-Clementel
 - Committee member for PhD students at Inria “Commission consultative des doctorants”, since July 2016.
 - Mediator between PhD students and their supervisors for Inria Paris

10.1.6. Conferences

- Matteo Aletti

- Minisymposium talk, International conference on Finite elements in flow problems (FEF), Rome (Italy), 2017
- Chloé Audebert
 - Invited speaker, GDR Mamovi, Sep 27-29, Lyon, France.
 - Minisymposium talk, International Conference on Computational Bioengineering, Sep 6-8, Compiègne, France.
 - Talk, Colloquium 595 Biomechanics and computer assisted surgery meets medical reality, Aug 29-31, Lille, France.
 - Weekend de l'innovation chirurgicale (WIC), Jun 23-25, Cabourg, France.
 - Talk, Congrès SMAI 2017, 8e Biennale Française des Mathématiques Appliquées et Industrielles, Jun 5-9, Ronce-les-bains, France.
 - Minisymposium talk, Computational and mathematical Biomedical Engineering (CMBE), Apr 10-12, Pittsburgh, USA.
 - Seminar, bioMMeda group, Mar 8th, Ghent University, Ghent, Belgium.
 - Seminar, Laboratoire de mathématique MAP5, Mar 3rd, Université Paris Descartes, Paris, France.
- Ludovic Boilevin-Kayl
 - Minisymposium talk, 5th International Conference on Computational and Mathematical Biomedical Engineering (CMBE), April 10th-12th, Pittsburgh, PA, United States.
- Laurent Boudin
 - Contributed talk, Workshop “Franco-Italian meeting on kinetic theory and singular parabolic equations”, Mar 16-17, Paris, France
 - Invited talk, “Aerosolstorming” meeting of the “Société de Pneumologie en Langue Française”, May 2017, Paris, France
 - Invited talk, Summer School on Computational Social and Behavioral Sciences, Sep 2017, Paris, France
 - Seminar, ENS Paris-Saclay Starters scientific talks in mathematics and computer science, Sep 2017, Cachan, France
 - Invited talk, Workshop “Modelling, simulation and study of social behaviour”, Oct 2017, Nancy, France
 - Invited talk, Conference on Partial differential equations and semi-groups, Dec 2017, Besançon, France
- Muriel Boulakia
 - Seminar Analysis, Ceremade, Univ. Paris Dauphine, December 2017
 - Seminar, Univ. Paris Descartes, November 2017
 - Seminar PDE, Univ. Versailles, May 2017
- Miguel Ángel Fernández Varela
 - Invited semi-plenary lecture, International conference on Finite elements in flow problems (FEF), Rome (Italy), 2017
- Jean-Frédéric Gerbeau
 - Invited lectures (6 hours), Maxwell Institute Graduate School on Evolution Equations, ICMS, Edinburgh, UK, 2017
 - Invited lecture, Conference “Quiet 2017”, Quantification of Uncertainty: Improving Efficiency and Technology, SISSA, Trieste, Italy, July 2017

- Invited lecture, Workshop “In Silico Human drug safety and efficacy”, Oxford, UK, September 2017
- Invited lecture, Workshop GDR Mamovi.
- Seminar, Weierstrass Institute for Applied Analysis and Stochastics (WIAS), Berlin, Germany, November 2017
- Minisymposium talk, ICCB conference, Compiègne, France, September 2017
- Céline Grandmont
 - ULB Maths Colloquium, Bruxelles, april 2017
 - Colloquium Univ. Lille, december 2017
- Florian Joly
 - Weekend de l’innovation chirurgicale (WIC), Jun 23-25, Cabourg, France.
 - Talk, GRIC Journées Françaises de Radiologie, Oct 12th, Paris, France.
- Damiano Lombardi
 - CMBE 2017, Pittsburgh (US), invited to the minisymposium on *Adaptation, growth and remodelling*
 - CMBE 2017, Pittsburgh (US), organiser of the minisymposium on *Reliable predictions in biomedical applications*
- Dena Kazerani
 - Talk, Groupe de travail de biologie, Tours-Orléans, October 2017, Orléans, France.
 - Poster, Congrès SMAI 2017, 8e Biennale Française des Mathématiques Appliquées et Industrielles, June 2017, Ronce-les-bains, France.
 - Talk, Ecole EGRIN: Ecoulements Gravitaires et Risques Naturels, June 2017, Cargèse, France.
 - Talk, Séminaire du Laboratoire Hydraulique Saint-Venant, January 2017, Chatou, France
 - Poster, vingt-neuvième séminaire sur “la mécanique des fluides numériques” organised by GAMNI-CEA, Institut Henri Poincaré (IHP), January 2017, Paris, France.
- Alexandre This
 - Poster, 9th international conference on Functional Imaging and Modeling of the Heart, FIMH, Toronto, June 2017
- Elliott Tixier
 - Invited talk, Workshop on Mathematical Methods in Cardiac Electrophysiology, Nov 4-6, Ottawa, Canada
 - Invited talk, GdR Mamovi meeting, Sep 27-29, Lyon, France
 - Poster presentation, QUIET 2017 Workshop, Jul 18-21, Trieste, Italy
- Marina Vidrascu
 - Invited talk ,The Sixth International Conference on Scientific Computing and Partial Differential Equations, Hong Kong Baptist University, June 5-8, 2017
- Irene Vignon Clementel
 - Seminar, Universitätsklinikum Aachen, Dec 4th 2017, Aachen, Germany
 - Seminar, LiSyM consortium, Nov. 28th 2017, Paris, France
 - Seminar, U. de Caen, Dpt of Mathematics, Nov. 13th 2017, Caen, France
 - Invited, SimInhale workshop, Oct. 4-5th 2017, Athens, Greece
 - Seminar, Ecole Polytechnique, Oct 16th 2017, Palaiseau, France
 - Seminar, Marie-Lannelongue Hospital, Sept 18th 2017, Plessis-Robinson, France

- Keynote (invited), Colloquium 595 Biomechanics and computer assisted surgery meets medical reality, Aug 29-31, Lille, France.
- Invited talk, Weekend de l'innovation chirurgicale (WIC), Jun 23-25, Cabourg, France.
- Minisymposium talk, Computational and mathematical Biomedical Engineering (CMBE), Apr 10-12, Pittsburgh, USA.
- Seminar, Eindhoven U., Dpt of Bioengineering, March 24th 2017, Eindhoven, The Netherlands
- Seminar, Organox - Paul Brousse Hospital, Jan 24th 2017, Villejuif, France

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence:

- Ludovic Boilevin-Kayl
 - Calculus, 80h, L1, UPMC
 - Matrix computations, 18h, L1, UPMC
- Laurent Boudin
 - Introduction to series for signal theory, 18h, L2, UPMC
 - Shared studies supervision in mathematics licence for approximately 500 students, 24h, L2, UPMC (until Aug 31, 2017)
 - Calculus, 38.5h, L1, UPMC
 - Student advising for orientation and professional insertion, 22h, L2, UPMC
 - Numerical methods for ODE, 26.5h, L3, UPMC
- Muriel Boulakia
 - Scilab, 35h, L2, UPMC
 - Nonlinear systems and optimization, 35h, L3, Polytech'Paris
 - Oral tests in in topology and differential calculus, 20h, L3
- Miguel Ángel Fernández Varela
 - Analysis and Scientific Computing, 30h, L3, ENPC
- Jean-Frédéric Gerbeau
 - Control of dynamical systems, 32h, L3, Ecole Polytechnique.
- Céline Grandmont
 - Ordinary differential equations, 24h, L3, UPMC
- Damiano Lombardi
 - Analysis and Scientific Computing, 32h, L3, ENPC
 - Numerical Methods, 48h, L3, Polytech'Paris
- Marc Thiriet
 - Modeling and Simulation for Computer-Aided Medicine and Surgery, 16h, L3-M2, National Taiwan University
- Irene Vignon Clementel
 - Numerical Methods for Ordinary Differential Equations, 24h ETD, L3, UPMC
 - Numerical simulations of blood flow, 1h30, as part of the undergraduate “continuum mechanics”, AgroParisTech

Master:

- Laurent Boudin
 - Basics for numerical methods, 27h, M1, UPMC
 - Student advising for orientation and professional insertion, 20h, M1, UPMC
- Muriel Boulakia
 - Preparatory course for teaching admission examination “Agrégation”, 25h, M2, UPMC
- Miguel Ángel Fernández Varela
 - Modeling and numerical methods for hemodynamics, 30h, M2, UPMC
- Jean-Frédéric Gerbeau
 - Seminar for M2 students of the master “Math SV” (1h), M2, Univ Paris-Sud, December
 - Seminar for M2 students at Ecole des Mines (3h), Paris, February
- Irene Vignon Clementel
 - Modélisation hémodynamique & simulation numérique comme outil pour la chirurgie, 1h, M2, Université Paris Sud

10.2.2. Supervision

PhD: Chloé Audebert, Modeling of liver hemodynamics, defended on February 24, 2017. Supervisors: J.-F. Gerbeau & I. Vignon Clementel.

PhD: Matteo Aletti, Multiscale retinal vascular modeling, defended on May 30, 2017. Supervisors: J.-F. Gerbeau & D. Lombardi.

PhD: Eliott Tixier, Variability modeling and numerical biomarkers design in cardiac electrophysiology, defended on December 18, 2017. Supervisors: J.-F. Gerbeau & D. Lombardi.

PhD: Nicolas Pozin, Multiscale lung ventilation modeling in health and disease, defended on October 6, 2017. Supervisors: C. Grandmont & I. Vignon Clementel.

PhD in progress: Andrea Bondesan, Kinetic and fluid models, numerical and asymptotic analysis, since October 2015. Supervisors: L. Boudin, B. Grec & S. Martin.

PhD in progress: Ludovic Boilevin-Kayl, Modeling of cardiac implantable devices, since February 2016. Supervisors: J.-F. Gerbeau & M.A. Fernández Varela

PhD in progress: Alexandre This, Fusion data/simulation for the assessment of mitral regurgitation, since January 2016. Supervisor: J.-F. Gerbeau

PhD in progress: Chen-Yu Chiang, Transport on biological systems and some applications, since February 2016. Supervisor: M. Thiriet

PhD in progress: Felipe Galarce, Enhancing hemodynamics measurements with mathematical modeling, since December 2017. Supervisors: J.-F. Gerbeau & D. Lombardi.

10.2.3. Juries

- Muriel Boulakia
 - PhD committee: Charlie Douanla Lontsi, Inria Bordeaux Sud-Ouest
- Jean-Frédéric Gerbeau
 - PhD committees: Ivan Fumagalli, Politecnico di Milano (referee); Rajnesh Lal, Univ Montpellier (referee).
 - HDR committees: Edmond Vigmond, Univ Bordeaux; Sébastien Boyaval, Univ Paris-Est.
 - Hiring committee: Inria Paris (CR2).
- Céline Grandmont
 - Member of the “agrégation” jury in mathematics.

- Hiring committees: Inria Nancy (CR2), Inria DR2, Professor position Paris-Sud University.
 - PHD committee: M. Deville, Bordeaux University (Referee), Nicolas Pozin, UPMC (co-advisor).
- Marina Vidrascu
 - Hiring committee: IR CNRS
- Irene Vignon Clementel
 - Hiring committees: Starting Research Positions and Senior Research Positions at Inria
 - PhD committee: Roch Mollero, University of Nice-Sophia Antipolis (Referee), Nicolas Pozin, UPMC, (co-advisor), Arthur Ghigo, UPMC, Chloé Audebert, UPMC, (co-advisor), Andie de Villiers, U. of Cape Town, (Referee), Petru Bucur, Inserm.

10.3. Popularization

- Céline Grandmont
 - Conference “Métier”: Master Maths students, UPMC, Oct 2017
- Irene Vignon Clementel
 - Presentation to celebrate the renewal of UPMC-Inria Paris partnership, June 22nd 2017, Paris, France

SERENA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Alexandre Ern, Iain Smears, and Martin Vohralík have organized a 2-day workshop on **A posteriori error estimates, adaptivity, and advanced applications**, in the framework of the ERC GATIPOR project. 40 participants from the whole world.

Soleiman Yousef and Martin Vohralík have organized a 1-day workshop **Journée contrat cadre IFP Energies Nouvelles/Inria**.

10.1.1.2. Member of the Organizing Committees

Géraldine Pichot and Michel Kern are members of the local organizing committee of the **Computational Methods in Water Resources 2018** conference.

Martin Vohralík was a member of the organizing committee of the *Finite Volumes for Complex Applications* conference.

10.1.2. Scientific Events Selection

10.1.2.1. Member of the Conference Program Committees

Alexandre Ern and Martin Vohralík were members of the scientific committee of the **ENUMATH 2017** conference.

Martin Vohralík was a member of the scientific committee of the *Finite Volumes for Complex Applications* conference.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

François Clément is a member of the editorial board of **Matapli** from September 2017.

Alexandre Ern is a member of the editorial boards of **SIAM Journal on Scientific Computing**, **ESAIM Mathematical Modelling and Numerical Analysis**, **IMA Journal of Numerical Analysis**, **Computational Methods in Applied Mathematics**, and **Journal de l'Ecole polytechnique, Mathématiques**.

M. Vohralík is a member of the editorial boards of **SIAM Journal on Numerical Analysis** and of **Acta Polytechnica**.

10.1.3.2. Reviewer - Reviewing Activities

Thomas Boiveau was a reviewer for the Journal of Scientific Computing and the journal Geometrically Unfitted Finite Element Method and Applications (Proceedings of the UCL Workshop 2016).

Matteo Cicuttin was a reviewer for the journal Journal of Computational and Applied Mathematics.

Alexandre Ern served as reviewer for tens of papers in different journals.

Frédéric Marazzato was a reviewer for the journal Modelling and Simulation in Materials Science and Engineering.

Laurent Monasse was a reviewer for the Journal of Computational Physics, the European Journal of Mechanics B Fluids, and the International Journal for Numerical Methods in Engineering.

Michel Kern was a reviewer for Computers and Geosciences, Advances in Computational Mathematics, ESAIM: proceedings, ARIMA, and Applicable Analysis.

Martin Vohralík served as reviewer for tens of papers in different journals.

10.1.4. Invited Talks

Alexandre Ern, plenary speaker, **SIAM Conference on Mathematical and Computational Issues in the Geosciences 2017**, Erlangen, Germany.

Alexandre Ern, invited speaker, **POEMS 2017**, Milano, Italy.

Alexandre Ern, invited speaker, **Inauguration workshop** of the French-German-Italian LIA COPDESC on Applied Analysis.

Michel Kern, plenary speaker, **6th Workshop on Parallel-in-Time methods**, Locarno, Switzerland.

Martin Vohralík, plenary speaker, **TamTam 2017**, Hammamet, Tunisia, May 2017.

Martin Vohralík, plenary speaker, **International Conference on Approximation Methods and Numerical Modelling in Environment and Natural Resources**, Oujda, Morocco, May 2017.

Martin Vohralík, plenary speaker, **Czech workshop on complex systems**, Prague, Czech Republic, September 2017.

10.1.5. Leadership within the Scientific Community

M. Kern is a reviewer for the German Supercomputing Center JARA program.

M. Kern is a member of the Scientific Committee of **Orap** (ORganisation Associative du Parallélisme), of the Scientific Board of **GDR Calcul**, and of the jury and executive board of **Label C3I**.

M. Vohralík is a member of the steering committees of **Géosciences franciliennes** and **Summer schools CEA-EDF-Inria**.

10.1.6. Research Administration

F. Clément is a member of the *Comité local d'hygiène, de sécurité et des conditions de travail* of the Inria Research Center of Paris.

F. Clément is the **AMIES** facilitator of the Inria Research Center of Paris.

M. Kern is Deputy Director of **Maison de la Simulation**, a joint project between CEA, CNRS, Inria, Université de Paris 11, and Université de Versailles, focused on applications of high end computing.

M. Kern is a member of the *Comité de site* of the Inria center of Paris.

G. Pichot is a member of the *Comité local d'hygiène, de sécurité et des conditions de travail* of the Inria center of Paris.

G. Pichot is member of the Conseil de département MAM of Polytech Lyon.

G. Pichot is member of the Commission de développement technologique (CDT) of the Inria center of Paris.

G. Pichot is a member of the CES commission of the Inria center of Paris.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : Amina Benaceur, Eléments d'arithmétique, 19h15, L2, University Pierre et Marie Curie, France.

Licence : Thomas Boiveau, Equations aux dérivées partielles et éléments finis 15h, L3, Ecole des ponts ParisTech, France

Licence : Alexandre Ern, Optimal Control, 20h, L3, Ecole Polytechnique, France.

Licence : Alexandre Ern, Partial differential equations, 10h, L3, Ecole nationale des ponts et chaussées, France.

Licence : Frédéric Marazzato, Analyse et Calcul Scientifique, 15h, L3, Ecole Nationale des Ponts et Chaussées, France.

Master : Alexandre Ern, Discontinuous Galerkin methods, 20h, M2, University Pierre et Marie Curie, France.

Master : Alexandre Ern is the leader of the Master Mathématiques et applications of ENPC.

Master : Frédéric Marazzato, Remise à niveau en Mécanique des Milieux Continus, 9h, M2, Ecole Nationale des Ponts et Chaussées, France.

Master : Frédéric Marazzato, Reliability of Materials and Structures, 15h, M1, Ecole Nationale des Ponts et Chaussées, France.

Master : Frédéric Marazzato, Projet de Département Génie Mécanique et Matériaux, 20h, M1, Ecole Nationale des Ponts et Chaussées, France.

Master: Michel Kern, Inverse Problems, 26h, M1, Mines-ParisTech, France

Master: Michel Kern, Advanced Numerical Analysis, 30h, M2, Institut Galilée, Université Paris 13, France

Master: Michel Kern, Subsurface flows, 30 h (with E. Mouche), M2, Université Paris Saclay, France

Martin Vohralík, **CIMPA Summer School on Multiscale Computational Methods and Error Control**, Kanpur, India, July 2017, 10h.

10.2.2. Supervision

PhD: Sarah Ali Hassan, A posteriori error estimates and stopping criteria for solvers using the domain decomposition method and with local time stepping, University Pierre and Marie Curie, 26 June 2017, Martin Vohralík, Caroline Japhet, and Michel Kern.

PhD: Yannick Masson, Tchebyshev nets and application to Grid Shells, University Paris-Est, 09 June 2017, Alexandre Ern and Olivier Baverel.

PhD: Rita Riedlbeck, Adaptive algorithms for poromechanics and poroplasticity, University of Montpellier, 27 November 2017, Daniele di Pietro and Alexandre Ern.

PhD in progress: Amina Benaceur, Model reduction in thermo-mechanics, 01 January 2016, Alexandre Ern.

PhD in progress: Karol Cascavita, Discontinuous skeletal methods for yield fluids, 01 October 2015, Alexandre Ern and Xavier Chateau.

PhD in progress: Jad Dabaghi, Adaptive modeling via complementarity of phase appearance and disappearance in fractured and porous media, 01 November 2015, Martin Vohralík Vincent Martin.

PhD in progress: Patrik Daniel, Adaptive multilevel solvers with a posteriori error control for porous media flows, 01 October 2015, Martin Vohralík and Alexandre Ern.

PhD in progress: Frédéric Marazzato, Fracture and fragmentation simulated by the discrete element method, 01 October 2016, Alexandre Ern.

PhD in progress: Riccardo Milani, Compatible Discrete Operator schemes for Navier–Stokes equations, 01 October 2017, Alexandre Ern.

PhD in progress: Ani Miraci, Robust a posteriori error control and adaptivity with inexact solvers, 01 October 2017, Martin Vohralík and Alexandre Ern.

PhD in progress: Nicolas Pignet, Hybrid High-Order methods for nonlinear mechanics, 01 November 2016, Alexandre Ern.

10.2.3. Juries

Alexandre Ern, Examiner, HDR C. Le Potier, University Paris Est, 15 November 2017.

Laurent Monasse, Examiner, PhD J. Ridoux, University Pierre and Marie Curie, 4 October 2017.

Martin Vohralík, President of the committee, PhD R. Riedelbeck, University of Montpellier, 27 November 2017.

Martin Vohralík, Examiner, HDR P. Gosselet, ENS Cachan, 10 February 2017.

10.3. Popularization

F. Clément was the coordinator of the Maths-Enterprises booth for **AMIES** and **Labex mathématiques Hadamard** at the *18e Salon Culture & Jeux Mathématiques*, held in Paris, 27–30 May, 2017.

F. Clément coordinated an article for **AMIES** in *Interstices* ([42]).

Major publications by the team in recent years: [1], [2], [3], [4], [5], [6], [7], [8], [9], [10].

TAPDANCE Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Scientific Events Selection

7.1.1.1. Reviewer

Both Damien Woods and Pierre-Étienne Meunier blind-reviewed papers for a number of computer science theory conferences (and do not wish to disclose further information related to blind peer review).

7.1.2. Journal

7.1.2.1. Guest Editor for Journal Special Issue

Damien Woods was guest editor (along with Yannick Rondelez, CNRS & ESPCI) of a special issue of the journal *Natural Computing* dedicated to the conference DNA22 (2016). The special issue will appear in 2018.

7.1.2.2. Reviewer - Reviewing Activities

Both Damien Woods and Pierre-Étienne Meunier reviewed papers for a variety of scientific journals (and do not wish to disclose further information related to blind peer review).

7.1.3. Invited Talks

- Woods. Centre for Research and Interdisciplinarity (CRI), Masterclass, Paris, France, 2017.
- Woods. Paris Sciences et Lettres (PSL institute), group on Origins and Conditions of Appearance of Life, Observatoire de Paris, France. 2017.
- Meunier, RustFest 2017 in Kiev, Ukraine, April 2017.

7.1.4. Contributed Talks (with no associated publication)

- Woods (speaker). FNANO 2017: 14th Annual Conference on Foundations on Nanoscience: Self-Assembled Architectures and Devices. Snowbird, UT. [Woods, Doty, Myhrvold, Hui, Zhou, Yin and Winfree. *Iterated circuit computation by DNA self-assembly in a field-programmable gate array architecture*]
- Woods. DNA23: The 23rd International Conference on DNA Computing and Molecular Programming, 2017. UT Ausin, Texas [Woods, Doty, Myhrvold, Hui, Zhou, Yin and Winfree. *Iterated circuit computation by DNA self-assembly in a field-programmable gate array architecture*]
- Meunier (speaker). DNA 23: The 23rd International Conference on DNA Computing and Molecular Programming. UT Austin Texas, USA. [Meunier, Woods. *The non-cooperative tile assembly model is not intrinsically universal or capable of bounded Turing machine simulation*]

7.1.5. Conference Programme Committees

- Woods. CiE 2017. Computability in Europe. Turku, Finland.
- Woods. DNA23: The 23rd International Conference on DNA Computing and Molecular Programming, 2017. UT Ausin, Texas
- Woods. UCNC 2017. Unconventional Computation and Natural Computation. Fayetteville, AR.

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

Woods taught a 1-week course on molecular computing to Masters students at ENS Lyon (with N. Schabanel, Y. Rondelez, C. Moskalenko, L. Bellon). Course title: ER02: Molecular programming: Theory & Wet Lab Nano-Scale Computation. <https://www.irif.fr/~nschaban/2017-ER02/>

ALPINES Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- Frederic Hecht: Organized the 9th FreeFem++ days (December 2017, Paris)
- Xavier Claeys was main organiser (together with S. Fliss, B. Delourme and J. Diaz) of the 3 days colloquium "Waves Diffracted by Patrick Joly", in honour of P. Joly's 60th birthday, that took place in Saclay and Gif-sur-Yvette.
- Xavier Claeys and Frédéric Nataf were the main organisers (together with V. Dolean) of a workshop on "Numerical methods for wave propagation and applications" held in Jussieu campus of UPMC on 31st of August and 1st of September.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

10.1.2.1.1. Laura Grigori

- March 2014 – current. Member of the editorial board for the SIAM book series Software, Environments and Tools. See <http://bookstore.siam.org/software-environments-and-tools/>.
- June 2013 – current. Area editor for Parallel Computing Journal, Elsevier
- January 2016 – current. Associate Editor, SIAM Journal on Scientific Computing.
- January 2017 – current. Associate Editor, SIAM Journal on Matrix Analysis and Applications.
- January 2016 – current. Editorial board, Numerical linear algebra with applications Journal, Wiley.

10.1.2.1.2. Frédéric Nataf

- 2014 – current. Associate Editor, Journal of Numerical Mathematics, de Gruyter.

10.1.3. Invited Talks

- Laura Grigori: Keynote speaker, 46th International Conference on Parallel Processing (ICPP-2017), <http://www.icpp-conf.org/2017/index.php>, Bristol, UK, August 14-17, 2017.
- Laura Grigori: Keynote speaker, Power-Aware Computing Workshop - PACO2017, <https://www2.mpi-magdeburg.mpg.de/mpcsc/events/paco2017/index.php>, July 2017, Germany.
- Laura Grigori: Plenary talk, Householder Symposium XX on Numerical linear algebra, <http://www.math.vt.edu/HHXX/>, June 2017, Virginia Tech.
- Laura Grigori: Invited plenary speaker, International Conference on Domain Decomposition Methods DD XXIV, <http://www.ddm.org/dd24/invited.html>, February 2017, Longyearbyen, Norway.

10.1.4. Leadership within the Scientific Community

- Laura Grigori: Chair of the SIAM SIAG on Supercomputing (SIAM special interest group on supercomputing), January 2016 - December 2017. Nominated by a Committee and elected by the members of this SIAG.
- Laura Grigori: Member of the PRACE (Partnership for Advanced Computing in Europe, <http://www.prace-ri.eu/>) Scientific Steering Committee, September 2016 - current.
- Laura Grigori: Steering committee member, Challenge 7: Information and communication society, ANR (Comité de Pilotage , Défi 7), November 2016 - September 2017.

10.1.5. Scientific Expertise

- Laura Grigori: November 2015 - current, expert to the Scientific Commission of IFPEN (French Petroleum Institute). Evaluation of research programs, PhD theses, work representing a total of 5 days per year.
- Xavier Claeys was member of a hiring committee for a position of maître de conférence in section CNU 60/61 for the Institut de Recherche de Coordination Acoustique et Musicale (IRCAM) and Université Pierre-et-Marie Curie Paris 6, in Spring 2017.

10.1.6. Research Administration

- Laura Grigori: Member of the Director Committee (Comité Directeur) of GIS Geosciences franciliennes, since November 2015.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

10.2.1.1. Xavier Claeys

- Academic year 2017-2018, total number of course hours: 192 hrs
 - Master 1: supervisoon of a student project for a group of 4 students in the curriculum Polytech, 80hrs, UPMC.
 - Master 1: Initiation to C++, 36 hrs of programming tutorials in C++, UPMC.
 - Master 1: Computational Linear Algebra, 32 hrs of lectures, UPMC.
 - Master 1: Practical programming of the finite element method, 12 hrs of lectures, UPMC.
 - Master 1: Approximation of EDPs, 24 hrs of programming tutorials in Python, UPMC.

10.2.1.2. Laura Grigori

- Spring 2017, Course on *High performance computing, large scale linear algebra, and numerical stability* (*Calcul haute performance, algorithmes parallèles d'algèbre linéaire à grande échelle, stabilité numérique* in french), https://who.rocq.inria.fr/Laura.Grigori/TeachingDocs/UPMC_Master2/Spr2017.html, Master 2nd year, Mathematics & Applications, University Pierre and Marie Curie, 20 hours per year.
- Winter 2017, Participation in the course on High Performance Computing given at University Pierre and Marie Curie, Master 2nd year, Computer Science, intervention for 8 hours per year.

10.2.1.3. Frédéric Hecht

- Academic year 2016-2017, total number of course hours: 192 hrs
 - Master 1: Initiation au C++, 24hrs, M1, Université Pierre-et-Marie Curie Paris 6, France
 - Master 2: Des EDP à leur résolution par la méthode des éléments finis (MEF), 24hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
 - Master 2: Numerical methods for fluid mechanics, 10hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
 - Master 2: Calcul scientifique 3 / projet industriel FreeFem++, 28hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
 - Master 2: Ingénierie 1 / Logiciel pour la simulation (FreeFem++), 21hrs, M2, Université Pierre-et-Marie Curie Paris 6, France
 - Master 2: Ingénierie 2 / Projet collaboratif, 21hrs, M2, Université Pierre-et-Marie Curie Paris 6, France

10.2.1.4. Frédéric Nataf

- Spring 2017: Course on *Domain Decomposition Methods*, Master 2nd year Mathematics & Applications, University Pierre and Marie Curie
- Winter 2017: Course on *Domain Decomposition Methods*, Master 2nd year, Mathematics & Applications, ENSTA and UVSQ

10.2.2. Supervision

- PhD in progress: Alan Ayala, since October 2015 (funded by NLAFFET H2020 project), co-advisors Xavier Claeys and Laura Grigori.
- PhD in progress : Sebastien Cayrols, since October 2013 (funded by Maison de la simulation), advisor Laura Grigori.
- PhD in progress: Hussam Al Daas, since February 2015 (funded by contract with Total), advisor Laura Grigori.
- PhD in progress: Olivier Tissot, since October 2015 (funded by NLAFFET H2020 project), advisor Laura Grigori.
- PhD in progress: Rim El Dbaissy, since November 2015 (funded by Univ. St Joseph, Liban), advisors Tony Sayah, Frédéric Hecht.
- PhD in progress: Pierre Marchand, since October 2016 (funded by ANR NonLocalDD project), advisors Xavier Claeys et Frédéric Nataf.
- PhD in progress: Zakariae Jorti, since February 2016 (funded by IFPen), advisor Laura Grigori.
- PhD in progress: Igor Chollet, since October 2017 (funded by ICSD), advisors Xavier Claeys, Pierre Fortin, Laura Grigori.
- PhD in progress: Thanh Van Nguyen, since November 2017 (funded by ANR CinePara), advisor Laura Grigori.

10.2.3. Juries

- Frédéric Hecht, President of the Jury for the PhD thesis of Alexandre LIMAR, Applied Mathematics, UTT, October 2017.
- Laura Grigori, President of the Jury for the PhD thesis of Chaoyu Quan, Applied Mathematics, UPMC, November 2017.
- Frédéric Hecht, President of the Jury for the PhD thesis of Roberto Molina, Applied Mathematics, UPMC, December 2017.

DYOGENE Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Conference Program Committees

- Ana Busic: QEST 2017.

10.1.1.2. Reviewer

All members of the team act as reviewers for numerous conferences.

10.1.2. Journal

10.1.2.1. Member of the Editorial Boards

François Baccelli: Bernoulli, Queueing Systems.

10.1.2.2. Reviewer - Reviewing Activities

All members of the team act as reviewers for numerous scientific journals.

10.1.3. Invited Talks

- François Baccelli
 - WiOpt, Paris, May 2017, keynote speaker,
 - WITMSE, Paris, September 2017; plenary speaker.
 - 2nd Symposium on Spatial Networks, Oxford, September 2017; invited talk.
- Bartek Blaszczyszyn
 - LINC Scientific Committee Workshop, Paris, June 2017; invited talk.
 - Tokyo Institute of Technology, November 2017; invited talk.
 - Kyushu University, November 2017, invited talk.
- Ana Busic
 - Tutorial speaker at YEQT XI: “Winterschool on Energy Systems”, December, 2017; <https://www.eurandom.tue.nl/event/yeqt-xi-winter-school-on-energy-systems/>
 - Invited speaker at Second Conference on the Mathematics of Energy Markets Wolfgang Pauli Institute, Vienna, July, 2017; <https://www.mn.uio.no/math/english/research/groups/store/events/conferences/second-conference-on-the-mathematics-of-energy-mar.html>
 - Invited speaker at PDE and Probability Methods for Interactions, Sophia Antipolis (France), March 2017; <https://project.inria.fr/pde2017/>

10.1.4. Leadership within the Scientific Community

Since 2014: A. Busic is leading (with E. Hyon, Univ. Paris Ouest Nanterre et LIP6) the working group GdT COSMOS (Stochastic Control and Optimization, Modeling, and Simulation) of CNRS research network GdR RO; <http://gdrro.lip6.fr/?q=node/78>. This includes scientific organization of 2 one-day workshops per year (30-50 participants).

10.1.5. Research Administration

A. Busic : Member of the Conseil du DI ENS.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence: A. Busic (Cours) and Sébastien Samain (TD) **Structures et algorithmes aléatoires** 80heqTD, L3, ENS, France.

Licence: B. Blaszczyzyn (Cours) **Théorie de l'information et du codage** 24 heqTD, L3, ENS, France.

Master: A. Busic (Cours + TD) **Fondements de la modélisation des réseaux** 18 heqTD, L3, ENS, France.

Master: Bartłomiej Blaszczyzyn (Cours) **Processus ponctuels, graphes aléatoires et géométrie stochastique** 39heqTD, M2 Probabilités et Modèles Aléatoires, UPMC, France

Master: Ana Busic and Marc Lelarge (Cours) et Rémi Varloot (TD) **Modèles et algorithmes de réseaux**, 50 heqTD, M1, ENS, Paris, France.

Master: B. Blaszczyzyn **Introduction to Spatial Stochastic Modeling: Random Graphs, Point Processes and Stochastic Geometry** (School of Computing, Tokyo Institute of Technology), 15 lessons 1h30.

10.2.2. Supervision

PhD: Lennart Gulikers “Trouver des algorithmes permettant de détecter des communautés dans des réseaux sociaux. Analyse de *Stochastic Block Model* et ses extensions” since 2015, defense 13 November 2017, going to Safran, supervised by Marc Lelarge with Laurent Massoulié.

PhD: Christelle Rovetta “Applications of perfect sampling to queuing networks and random generation of combinatorial objects”, since December 2013, defense 20 June 2017, co-advised by Anne Bouillard and Ana Busic.

PhD in progress: Léo Miolane, since 2016, supervised by Marc Lelarge

PhD in progress: Dalia-Georgiana Herculea, since October 2016 co-advised by B. Blaszczyzyn, E. Altman and Ph. Jacquet

PhD in progress: Md Umar Hashmi, Decentralized control for renewable integration in smartgrids, from December 2015, co-advised by A. Busic and M. Lelarge

PhD in progress: Alexandre Hollocou, since December 2015, supervised by Marc Lelarge with Thomas Bonald

PhD in progress: Sébastien Samain, Monte Carlo methods for performance evaluation and reinforcement learning, from November 2016, supervised by A. Busic

PhD in progress: Quentin Le Gall, since October 2017, co-supervised by B. Blaszczyzyn and E. Cali (Orange).

PhD in progress: Arnaud Cadas [PSL] “Dynamic matching models”, since 2017, supervised by A. Busic.

10.2.3. Juries

- B. Blaszczyzyn, PhD defense of Frederik Mallmann-Trenn (ENS).
- A. Busic
 - Co-president of the Commission Emplois Scientifiques (CES) at Inria Paris (hiring committee for PhD, post-doc and visiting professor positions);
 - Member of the hiring committee for Assistant Professor at Ecole Normale Supérieure and IUT Orsay.

EVA Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organization

10.1.1.1. General Chair, Scientific Chair

- **Thomas Watteyne** co-chaired the IOT2SUSTAIN invited workshop (<https://tinyurl.com/iot2sustain>), which brought together 22 researcher (half UCL, half Inria) to brainstorm on the state of IoT research today, and identify research directions. This event was organized on the UCL campus in London, 6-7 July 2017.
- **Thomas Watteyne** co-chaired the IETF98 (Chicago, remotely), IETF99 (Prague) and IETF100 (Singapore) 6TiSCH Working group meetings.
- **Pascale Minet** was general co-chair with Leila Saidane from ENSI (Tunisia) of the PEMWN 2017 conference, the 6th IFIP international conference on Performance Evaluation and Modeling of Wired and Wireless Networks, technically co-sponsored by IFIP WG6.2 and IEEE ComSoc (see <https://sites.google.com/site/pemwn2017/>). This conference was held at CNAM in Paris, the 28th, 29th and 30th of November 2017. It was sponsored by Inria, CNAM and ENSI. The organization co-chairs were Samia Bouzefrane and Selma Boumerdassi. Three tutorials were given:
 - *Dynamic Resource Allocation and Network Optimization in C-RAN* by Rami Langar, University of Paris-Est Marne-la vallée, (UPEM), France.
 - *Getting your Hands Dirty With the Industrial IoT!* by Thomas Watteyne, Inria, France.
 - *Machine learning: From supervised to unsupervised* by Francis Bach, Inria, France.

Twenty papers have been selected by the technical program committee and presented during the three days of the PEMWN 2017 conference.

- **Samia Bouzefrane** was general co-chair with Mehammed Daoui (University of Tizi-Ouzou, Algeria) and Damien Sauveron (University of Limoges, France) of the MSPN 2017 conference, the 3rd IFIP international conference on Mobile and Secure Programming Networks, technically co-sponsored by IFIP WG 11.2 (see <http://cedric.cnam.fr/workshops/mspn2017/>). This conference was held at CNAM in Paris, the 29th and 30th of June 2017. It was sponsored by CNAM, University of Limoges and SAFRAN. Two tutorials were given:
 - *Enabling emergent mobile systems in the IoT: Functional and QoS interoperability aspects at the middleware layer* by Nikolaos Georgantas, MIMOVE team (Inria, Paris), France.
 - *Identity Management for Internet connected objects* by Hanene Maupas, SAFRAN, France.

Seventeen papers have been selected by the technical program committee and presented during the two days of the MSPN 2017 conference

10.1.1.2. Member of the Organizing Committees

- **Paul Muhlethaler** organized the DGA Inria workshop on Telecommunication and networking “Cloud, cloudlet & MANET” in May 2017. The EVA team presented its activities: Remy Leone the results of the project F-Interop, Malisa Vucinic the results of the project ARMOUR, **Pascale Minet** the model and simulation results on collision avoidance on shared slots in TSCH, **Thomas Watteyne** presented the standardization issues in 6TiSCH, **Paul Muhlethaler** presented results on adaptive CSMA techniques.

- **Kevin Bonny** was member of the organizing committee of the international conference PEMWN 2017.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- **Paul Muhlethaler** was in Steering committee member of MobileHealth Workshop 2017.
- **Samia Bouzefrane** was track chair of ANT, The 8th International Conference on Ambient Systems, Networks and Technologies, May 2017.
- **Anis Louiti** was in Steering committee member of MobileHealth Workshop 2017.

10.1.2.2. Member of the Conference Program Committees

- **Paul Muhlethaler:**
 - ITST 2017,
 - MowNet 2017, International Conference on Selected Topics in Mobile & Wireless Networking, May 2017.
 - PEMWN 2017, 6th International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, November 2017.
 - Wireless Days, IFIP/IEEE Wireless Days 2017, 29 - 31 March 2017 Porto, Portugal.
 - WiOpt 2017, Paris, France, 15th - 19th May, 2017.
- **Pascale Minet:**
 - CoRes 2017, May 2017.
 - ETFA 2017, 22th IEEE International Conference on Emerging Technologies & Factory Automation, September 2017.
 - IINTEC 2017, the IEEE International Conference on Internet of Things, Embedded Systems and Communications, October 2017.
 - IUCC 2017, the 16th IEEE International Conference on Ubiquitous Computing and Communications, December 2017.
 - MoWNet 2017, International Conference on Selected Topics in Mobile & Wireless Networking, May 2017.
 - PEMWN 2017, 6th International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, November 2017.
 - PECCS 2017, 7th International conference on Pervasive and Embedded Computing and Communication Systems, July 2017.
 - WINCOM 2017, 3rd International Conference on Wireless Networks and Mobile Communications, October 2015.
 - Wireless Days, IFIP/IEEE Wireless Days 2017, 29 - 31 March 2017 Porto, Portugal.
 - WiSEE 2017, 5th IEEE International Conference on Wireless for Space and Extreme Environments, October 2017.
- **Thomas Watteyne:**
 - IFIP/IEEE International Symposium on Integrated Network Management, workshop on Future Networks for Secure Smart Cities (FNSSC), 2017.
 - IEEE International Conference on Communications (ICC), Selected Areas in Communications (SAC), 2015, 2016, 2017.
- **Samia Bouzefrane:**
 - PEMWN, 6th International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks, November 2017.

- VECoS, 11th International Conference on Verification and Evaluation of Computer and Communication Systems, August 2017.
- MobiSecServ, the third International Conference On Mobile And Secure Services, February 2017.
- EUSPN, The 8th International Conference on Emerging Ubiquitous Systems and Pervasive Networks, September 2017.
- **Anis Louiti:**
 - AIST 2017,
 - ITST 2017,
 - Mownet 2017,
 - PEMWN 2017,
 - SMARTCOMP 2017
 - Aintec 2017

10.1.2.3. Member of the Editorial Boards

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

10.1.2.4. Reviewer (Journals)

- **Paul Muhlethaler**
 - Reviewer Annals of telecommunications
 - Reviewer IEEE Transactions on Wireless Communications
 - Reviewer IEEE Transactions on Vehicular Technology
 - Reviewer IEEE Transactions on Information Theory
 - Reviewer International Journal of Distributed Sensor Networks. Hindawi.
- **Pascale Minet**
 - Annals of Telecommunications,
 - Ad Hoc Networks,
 - Computer Communications,
 - Computer Networks,
- **Thomas Watteyne**
 - ACM Transactions on Sensor Networks, 2017.
- **Nadjib Achir**
 - Reviewer Sensor Networks (MDPI)
 - Reviewer Wireless Communications and Mobile Computing (Wiley)
 - Reviewer Internet of Things Journal (IEEE)
 - Reviewer Ad Hoc Networks Journal (Elsevier)
- **Selma Boumerdassi**
 - Reviewer Ad Hoc Networks Journal (Elsevier);
 - Reviewer The journal of Future Generation Computer Systems (Elsevier).
- **Samia Bouzefrane**
 - The International Journal of Computer and Telecommunications Networking (Elsevier),
 - The IEEE Transactions on Mobile Computing,
 - The Information and Software Technology Journal (Elsevier)
 - The Springer Multimedia Tools and Application Journal
 - The ACM Transaction on Internet Technology
 - The Concurrency and Computation Practice and Experience Journal
 - the Journal of Systems and Software (Elsevier)

10.1.2.5. Reviewer (Book proposals)

Samia Bouzefrane was reviewer for the two book proposals in the CRC Press Taylor and Francis.

10.1.3. Invited Talks

- (tutorial) **Thomas Watteyne**. Getting your Hands Dirty With the Industrial IoT! International Conference on Performance Evaluation and Modeling in Wired and Wireless Networks (PEMWN), Paris, France, 28 November 2017.
- (talk) **Thomas Watteyne**. Construire son Réseau IoT en 10min. Inria-Paris, 12 March 2018.
- (talk) **Thomas Watteyne**. Exciting Developments in Industrial IoT, and its Potential Applications to Smart Agriculture. INRA-Inria Workshop, Rennes, France, 19 December 2017
- (talk) **Thomas Watteyne**. Low Power Wireless Solutions for Industry 4.0: Products, Standardization, Research and Example Deployments. Industry 4.0 Predictive Analytics and Forecasting: Research and Applications. Siemens Corporate Technology, Munich, Germany, 14-15 September 2017.
- (tutorial) **Thomas Watteyne** and Sami Malek. Wireless Bootcamp with NoeMote and SolSystem. UC Berkeley, 22-23 August 2017.
- (talk) **Thomas Watteyne**. OpenWSN Fresh: the 6TiSCH Reference Protocol Stack. Journées Scientifiques Inria, Sofia Antipolis, 15 June 2017.
- (panel) **Thomas Watteyne**. “Enough with the visions, Industrial IoT is here Today!”, on the panel “the path to successful IoT: from need of standards to security threads”. IEEE ICC, Paris, France, 22 May 2017.
- (talk) **Thomas Watteyne**. Building the Internet of (Important) Things, Universidad Diego Portales, Santiago, Chile, 5 May 2017.
- (talk) **Thomas Watteyne**. Researching and Deploying 6TiSCH Networks, Inria-Chile, 5 May 2017.
- (talk) **Thomas Watteyne**. Deploying 6TiSCH Networks. RIOT seminar, 13 April 2017.

10.1.4. Leadership within the Scientific Community

Thomas Watteyne co-chairs the IETF 6TiSCH standardization group.

10.1.5. Scientific Expertise

Thomas Watteyne regularly consults with major player in the (Industrial) IoT space.

10.1.6. Research Administration

Thomas Watteyne is of the Inria-Paris “Comite de Centre”, since 2016, where we work on making sure Inria-Paris will always remain one of the greatest places to work at!

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Intensive 1-week course on IoT, with associated hands-on labs. ENSTA ParisTech. Graduate level. **Thomas Watteyne** and Ziran Zhang. 9-12 October 2017.
- 1/2-day crash course on the Industrial IoT. Telecom ParisTech. Graduate level. **Thomas Watteyne**. 28 September 2017..
- 6-week course on IoT, with associated hands-on labs. ENSTA ParisTech. Undergraduate level. **Thomas Watteyne**, Keoma Brun-Laguna and Dominique Barthel. Spring 2017.

10.2.2. Supervision

- PhD : Nesrine Ben Hassine : Machine learning techniques for network resource allocation. University of Paris Saclay. **Pascale Minet** and Dana Marinca.
- PhD : Younes Bouchaala : Handling Safety Messages in Vehicular Ad-hoc NETWORKS. University of Paris Saclay. **Paul Muhlethaler**.

- PhD (in progress) : Keoma Brun-Laguna : Deterministic networking for the Industrial Internet of Things. Sorbonne University. **Thomas Watteyne** and **Pascale Minet**.
- PhD (in progress) : Jonathan Munoz. Time slotted systems for long range communications. Sorbonne University. **Thomas Watteyne** and **Paul Muhlethaler**.
- PhD (in progress) : Amar Abane : Name Data Networks in the Internet of Things. CNAM. Samia Bouzefrane and **Paul Muhlethaler**.
- PhD (in progress) : Abdallah Soheby : Etude et évaluation de la dissémination des informations dans la 5G. Eric Renault and **Paul Muhlethaler**.

10.2.3. Juries

- HdR:
 - Riadh Dhaou, “IoT composé de réseaux terrestres et par satellite au service des Smart Cities : mobilité et hétérogénéité”, Institut National Polytechnique de Toulouse, November 2017, **Pascale Minet** reviewer.
 - Hanen Hidoudi, “Contributions à l’amélioration des communications dans les réseaux sans fil multi-sauts”, University of Toulouse, November 2017, **Pascale Minet** examiner.
- PhD:
 - Alexandre Laubé, “Agrégation de trafic pour réduire la consommation énergétique globale dans les réseaux sans fil multi-sauts”, University of Paris Saclay, September 2017, Anis Laouiti examiner.
 - Bilal M. Maaz, “Allocation des ressources radio dans les réseaux sans-fil de la 5G”, University of Paris-Saclay, prepared at the University of Versailles-Saint Quentin, March 2017, **Pascale Minet** examiner.
 - Laurent Reynaud, “Stratégie de mobilité optimisée pour la tolérance aux perturbations dans les réseaux sans fil”, University of Lyon, March 2017, **Pascale Minet** examiner.
 - Ahmed Amari, “Specification and analysis of AeroRing - a full duplex Ethernet ring network for new generation avionics systems”, University of Toulouse - ISAE, September 2017, **Pascale Minet** reviewer.
 - Florian Grandhomme, “Etudes de protocoles de routage dynamique externe de type BGP dans un environnement réseaux tactiques ad hoc mobiles : faisabilité et performances”, University of Rennes 1, November 2017, **Pascale Minet** reviewer.
 - Moussa Déthié Sarr, “Spécification d’un mécanisme de construction automatique de topologies et d’adressage permettant la gestion dynamique de réseaux de capteurs sans fil linéaires”, University of Clermont, December 2017, **Pascale Minet** reviewer.
 - Aravinthan Gopalasingham, “SDN Based Service Oriented Control Approach For Future Radio Access Networks”, Télécom Sud-Paris, June 2017, **Paul Muhlethaler** examiner,
 - Boutheina Dab, “Optimization of Routing and Wireless Resource Allocation in Hybrid Data Center Networks”, Paris VI, July 2017, **Paul Muhlethaler** examiner.
 - David Alvarez Corrales, “Cooperative Communications in very large cellular Networks”, Télécom ParisTech, November 2017, **Paul Muhlethaler** examiner.
 - Younes Bouchaala, “Handling Safety Messages in Vehicular Ad-hoc NETWORKS”, UVSQ, December 2017, **Paul Muhlethaler** examiner.

10.3. Popularization

Outreach is very important for Inria-EVA, and it brings enormous visibility to the research done in the team. We use it to target a audience different that the one targetted through purely scientific publications.

10.3.1. Web presence

Within the Inria-EVA team, we are regular Twitter contributor through a dozen Twitter accounts, promoting the activities of Inria and Inria-Paris.

Inria-EVA also maintains the following Inria websites:

- <https://team.inria.fr/eva/>
- <http://www.openwsn.org/>
- <http://smartmarina.org/>
- <http://www.savethepeaches.com/>
- <http://www.snowhow.io/>
- <http://www.solsystem.io/>
- <http://www.headsup.tech/>

10.3.2. Tradeshow

- **Thomas Watteyne**, Ziran Zhang, Felipe Moran. IoT Solutions World Congress 2017, Barcelona, presenting SolSystem.
- **Thomas Watteyne**, Ziran Zhang. VIVATech 2017, Paris, Inria booth, presenting SolSystem.

10.3.3. In The News

- (French) SolSystem : une solution “sensor-to-cloud” clés en main, InriaInnovation, 10 November 2017 (**Thomas Watteyne**).
- Interview by L'Esprit Sorcier about SmartMarina, Fete de la Science, 8 October 2017 (**Thomas Watteyne**).
- Presenting the Smart Marina project at the VIVA Tech trade-show, Inria@Silicon Valley Newsletter, 19 September 2017 (**Thomas Watteyne**).
- (French, TV) Cap d'Agde : Une puce innovante pour gérer le port de plaisance, TV Sud, aired 20 June 2017 (**Thomas Watteyne**).
- (French) 1ère mondiale au Cap d'Agde, des capteurs détectent les entrées les sorties de bateaux, Atout Nautic, 20 June 2017 (**Thomas Watteyne**).
- (French) Le port du Cap d'Agde connecté, une première mondiale, France Bleu, 20 June 2017 (**Thomas Watteyne**).
- Interview with Thomas Watteyne “The new use of marinas requires rethinking their operation and imagining a new offer of services”, Marine & Oceans, June 2017 (**Thomas Watteyne**).
- (Spanish) Experto en IoT de Inria visita Inria Chile, Inria Chile, 9 May 2017 (**Thomas Watteyne**).
- (Spanish) Proyecto SmartMarina reinventa los puertos utilizando IoT, Inria Chile, 5 May 2017 (**Thomas Watteyne**).
- The EVA team reinvents the Smart Marina, Inria.fr, 26 April 2017 (**Thomas Watteyne**).
- FBF supports SmartMarina project in Cap d'Agde, France. France Berkeley Fund new, 21 April 2017 (**Thomas Watteyne**).
- (French) Le Cap d'Agde – le Port en Passe d'Etre Connecte ! Herault Tribune, 19 April 2017 (**Thomas Watteyne**).
- (French, video) Objets connectés : des capteurs intelligents pour mesurer l'environnement, YouTube InriaChannel, March 2017 (**Thomas Watteyne**).
- (French) Le numérique peut-il sauver l'agriculture? Inriality, February 2017 (**Thomas Watteyne**).

10.3.4. Miscellaneous Activities

The Inria-EVA team is running a permanent demo in the Inria-Paris demo showroom.

We worked together with the A/V team on the following videos:

- SmartMarina [English] <https://www.youtube.com/watch?v=LUcLE8D0RbM>
- SmartMarina [French] <https://www.youtube.com/watch?v=CwgyCmJvyuw>
- interview [French] <https://www.youtube.com/watch?v=zsbS310YVe0>
- SolSystem [French] <https://www.youtube.com/watch?v=juQGnGX5OGs>
- SaveThePeaches [English] https://www.youtube.com/watch?v=_qGSH8I0Vkk
- SaveThePeaches [French] <https://www.youtube.com/watch?v=cZvGw7DyIzI>
- HeadsUp! [English] <https://www.youtube.com/watch?v=51mIibi-tDs>

The Inria-EVA team very regularly hosts visiting companies interested in using the technology developed.

GANG Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Selection

9.1.1.1. Member of Conference Program Committees

- Adrian Kosowski: ICALP 2017, MFCS 2018, SIROCCO 2018.
- Carole Delporte-Gallet: ICDCN 2017, PODC 2017, IPDPS 2017, OPODIS 2017
- Pierre Fraigniaud: WWW 2017, SPAA 2017, DISC 2017.
- Hugues Fauconnier: SSS 2017, Algotel 2017
- Michel Habib: WG 2018
- Amos Korman: ICALP 2017
- Laurent Viennot: FCT 2017

9.1.2. Journal

9.1.2.1. Member of Editorial Boards

- Pierre Fraigniaud is a member of the Editorial Board of Distributed Computing (DC).
- Pierre Fraigniaud is a member of the Editorial Board of Theory of Computing Systems (TOCS).
- Pierre Fraigniaud is a member of the Editorial Board of Fundamenta Informaticae (FI).
- Adrian Kosowski is a member of the Editorial Board of Mathematical Foundations of Computing (AIMS MFOC)

9.1.3. Invited Talks

Carole Delporte, The Basics of Distributed Computing: consensus. 9th edition of the International Spring School on Distributed Systems(METIS 2017), May 2017.

Hugues Fauconnier, The Basics of Distributed Computing: Shared Memory. 9th edition of the International Spring School on Distributed Systems (METIS 2017), May 2017.

Carole Delporte: Workshop IWDCMR 2017 in honor of Michel Raynal, Détecteurs de défaillance, May 2017.

Michel Habib: IPM Combinatorics and Computing Conference 2017 (IPMCCC2017), Téhéran, May 2017

Michel Habib: Journée Charles Hermite Complexité : Théorie des graphes et théorie des nombres, Nancy, November 2017.

Adrian Kosowski: ADGA 2017 workshop (co-located with DISC 2017), Vienna, October 2017.

9.1.4. Scientific Expertise

Adrian Kosowski was an expert panel member for grant panel PE6 of the National Science Center, Poland (Spring 2017).

Carole Delporte-Gallet was in the recruiting jury of "Informaticien" at Assemblée Nationale.

Michel Habib was member of the COS (Comité d'Orientation Stratégique) of the Labex Archimede Marseille. One meeting in April 2017.

9.1.5. Research Administration

Pierre Fraigniaud is director of the Institute de Recherche en Informatique Fondamentale (IRIF).

Hugues Fauconnier is director of the UFR d'informatique of Université Paris Diderot.

Carole Delporte-Gallet is deputy director of the UFR d'informatique of Université Paris Diderot.

Michel Habib is member of the Administration Council of University Paris Diderot.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

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

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

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

Master: Carole Delporte, Cours Algorithmes répartis, 33h, M2, Univ. Paris Diderot

Master: Carole Delporte and Hugues Fauconnier, Théorie et pratique de la concurrence, 48h, M1, Université Paris Diderot

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

Licence: Carole Delporte and Hugues Fauconnier, Culture informatique, 16h, L2, Univ. Paris Diderot

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

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

Licence: Boufkhad Yacine, Traitement de données, 16h, L2, IUT de l'Université Paris Diderot

Master: Pierre Fraigniaud, Algorithmique avancée, 24h, Ecole Centrale Supélec Paris, M2

Master: Pierre Fraigniaud, Algorithmique parallèle et distribuée, 24h, Ecole Centrale Supélec Paris, M2

Master: Adrian Kosowski, Randomization in Computer Science: Games, Networks, Epidemic and Evolutionary Algorithms, 18h, M1, École Polytechnique

Licence: Adrian Kosowski, Design and Analysis of Algorithms, 32h, L3, École Polytechnique

Master: Pierre Fraigniaud and Adrian Kosowski, Algorithmique distribuée pour les réseaux, 24h, M2, Master Parisien de Recherche en Informatique (MPRI)

Master: Fabien de Montgolfier and Michel Habib, Grand Réseaux d'Interaction, 44h, M2, Univ Paris Diderot

Licence: Fabien de Montgolfier, Protocoles Réseau (TP/TD), 24h, M1, Univ Paris Diderot

Licence: Fabien de Montgolfier, Programmation avancée (cours/TD/projet, bio-informatique), 52h, L3, Univ. Paris Diderot

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

Licence: Fabien de Montgolfier, Algorithmique (TD), 26h, L3, Ecole d'Ingénieurs Denis Diderot

Master : Laurent Viennot, Graph Mining, 3h, M2 MPRI, Univ. Paris Diderot

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

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

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

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

Master: Michel Habib, Algorithmique de graphes, 12h, M2, Univ. Paris Diderot
 Licence: Pierre Charbit, Elements d'Algorithmique, 24h, L2, Université Paris Diderot, France
 Licence: Pierre Charbit, Automates finis, 36h, L2, Université Paris Diderot, France
 Licence: Pierre Charbit, Internet et Outils, 52h, L1, Université Paris Diderot, France
 Master: Pierre Charbit, Programmation Objet, 60h, M2Pro PISE, Université Paris Diderot, France
 Master: Pierre Charbit, Algorithmique de Graphes, 12h, M2 MPRI, Université Paris Diderot, France

9.2.2. Supervision

PhD in progress: Simon Collet (co-advised by Amos Korman and Pierre Fraigniaud). Title of thesis is: "Algorithmic Game Theory Applied to Biology". Started September 2015.

PhD in progress: Lucas Boczkowski (co-advised by Amos Korman and Iordanis Kerenidis). Title of thesis is: "Computing with Limited Resources in Uncertain Environments". Started September 2015.

PhD in progress: Brieuc Guinard (advised by Amos Korman). Title of thesis is: "Algorithmic Aspects of Random Biological Processes". Started October 2016.

PhD in progress: Laurent Feuilloley (advised by Pierre Fraigniaud). Title of thesis is: "Synchronous Distributed Computing". Started September 2015.

PhD in progress: Mengchuan Zou (co-advised by Adrian Kosowski and Michel Habib). Title of thesis is: "Local and Adaptive Algorithms for Optimization Problems in Large Networks". Started October 2016.

PhD in progress: Léo Planche (co-advised by Étienne Birmelé and Fabien de Montgolfier). Title of thesis is: "Classification de collections de graphes". Started October 2015.

PhD in progress: Alkida Balliu and Dennis Olivetti (PhD students from L'Aquila University and Gran Sasso Science Institute) are supervised by Pierre Fraigniaud.

PhD in progress: Lucas Hosseini (co-advised by Pierre Charbit, Patrice Ossona de Mendez and Jaroslav Nešetřil since Sept. 2014). Title: Limits of Structures.

Master internship (MPRI): Emmanuel Arrighi (advised by Laurent Viennot). (March-August 2017)
 Title of report: "Schéma d'étiquetage de graphe pour le pré-calcul de plus courts chemins".

9.2.3. Juries

Laurent Viennot was on the jury committee of the HDR thesis of Mauro Sozio (Telecom Paristech) "Algorithms for Making Sense of Massive Dynamic Graphs" at Paris-Saclay University, July 2017.

Michel Habib was referee and on the jury committee of the HDR thesis of Mauro Sozio (Telecom Paristech) "Algorithms for Making Sense of Massive Dynamic Graphs" at Paris-Saclay University, July 2017.

Michel Habib was on the jury committee of the HDR thesis of Reza Naserasr "Projective Cubes, a coloring point of view" at Paris Diderot University, July 2017.

Michel Habib was referee and on the jury of the PhD thesis of Kaoutar Ghazi "Heuristiques et conjectures à propos de la 2-dimension des ordres", Clermont-Ferrand, October 2017.

Michel Habib was referee and on the jury of the HDR thesis of Phan Thi Ha Duong "Chip Firing Game and related models: algebraic structures and enumerative combinatorics" at Paris Diderot University, December 2017.

Carole Delporte-Gallet was on the jury committee of the thesis of Florent Chevrou "Formalisation of Asynchronous Interactions" Toulouse University, November 2017.

Hugues Fauconnier was referee and on the jury of the PhD thesis of Matoula Petrolia "Distribuer Shared memory in failure prone message passing systèmes", Nantes University, October 2017.

9.3. Popularization

- Amos Korman wrote the article “Conseils d’une fourmi: Ne me prenez pas trop au sérieux !” published in the French journal *interstices* in 10.7.2017.
- An article about a paper by Amos Korman, Adrian Kosowski and Lucas Boczkowski was published in *CNRS news* in 10.1.2017.
- An article called “Les fourmis, génies de l’orientation” about a paper by Amos Korman, Adrian Kosowski and Lucas Boczkowski was published in *Le Monde* in 30.1.2017.
- Laurent Viennot is “commissaire d’exposition” for the permanent exposition on “Informatique et sciences du numérique” at Palais de la découverte in Paris (opening in February 2018).

MIMOVE Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Valérie Issarny is co-chair of the BIS'17 workshop, which is the yearly workshop organized by Inria@SiliconValley to present the state of scientific collaborations and to work on proposals for future ambitious joint projects.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Valérie Issarny is PC co-chair of ICSE-SEIS'2018 - The Software Engineering in Society Track of the ICSE'18 conference.
- R. Teixeira, Co-chair of the program committee of ACM IMC 2017.
- R. Teixeira, Co-chair of the program committee of ACM/ISOC ANRW 2017.

10.1.2.2. Member of the Conference Program Committees

- R. Teixeira, PC member of 2017 ACM SIGCOMM conference.
- Vassilis Christophides, PC member of 34th IEEE International Conference on Data Engineering.
- Vassilis Christophides, PC member of 2nd IFIP/IEEE International Workshop on Analytics for Network and Service Management (AnNet 2017)
- Nikolaos Georgantas is PC member of the following international conferences: FiCloud'17, ICSE'17 Poster Track, SAC'17 &'18, WETICE'17, AmI'17, SOSE'17&'18
- Nikolaos Georgantas is PC member of the following international workshops: CASA'17, MRT'17, SERENE'17, IoT-ASAP'17.
- Valérie Issarny is PC member of the following International Conferences: AIMS'17 & 18, EUROSYS'17, FASE'17 & 18, ICDCS'18, ICSE-SEIS'17, ICSE'18, ISEC'17, SEAMS'17.
- Valérie Issarny is PC member of the following international workshops: AMS'18, InterIoT'17.
- R. Agarwal, PC member of 10th International Conference of Contemporary Computing.

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

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

10.1.4. Invited Talks

- R. Teixeira, invited talk at Politecnico di Torino, "Home network QoE diagnosis", October 2017.
- R. Teixeira, journées scientifiques Inria, "Home network QoE diagnosis", June 2017.
- R. Teixeira, LINCIS workshop, "WeBrowse: a passive crowdsourced content discovery platform for communities of a place", June 2017.

- R. Teixeira, keynote speaker at the Simpósio Brasileiro de Redes de Computadores (Brazilian networking conference), “Home network QoE diagnosis”, May 2017.
- R. Teixeira, tutorial at the Simpósio Brasileiro de Redes de Computadores (Brazilian networking conference), “Internet Measurements: Bandwidth”, May 2017.
- R. Teixeira, tutorial at the Simpósio Brasileiro de Redes de Computadores (Brazilian networking conference), “Internet Traffic Measurements”, May 2017.
- R. Agarwal: “Extracting mobility information from CDRs and using it towards achieving enhanced dissemination in wireless networks”, EMap FGV seminar, 3 August 2017, Rio De Janeiro, Brazil.
- Vassilis Christophides, “Web-scale Blocking, Iterative and Progressive Entity Resolution”, with K. Stefanidis, V. Efthymiou ICDE 2017.
- Vassilis Christophides, “Web-scale Entity Resolution”, Invited lecture at the 3rd EGC Winter School (Ecole EGC), 23 & 24 January 2017, Grenoble, France.
- Nikolaos Georgantas, “Enabling emergent mobile systems in the IoT: Functional and QoS interoperability aspects at the middleware layer”, Invited keynote talk at MSPN’17 (International Conference on Mobile, Secure and Programmable Networking), June 2017.

10.1.5. Leadership within the Scientific Community

- V. Issarny, Council member, ACM Europe (since July 2017).
- R. Teixeira, Vice-chair of ACM SIGCOMM (July 2013 – June 2017).
- R. Teixeira, Chair of the ACM SIGCOMM Industrial Liaison Board (October 2013 – June 2017).
- V. Christophides, Member of the EDBT Association (since 2014).

10.1.6. Scientific Expertise

- R. Teixeira, Reviewer of H2020 projects: CogNet, SUPERFLUIDITY, MONROE, MAMI.
- R. Teixeira, Technical advisory board of the project "Mapping of Broadband Services in Europe".
- Valérie Issarny is elected member of the *Commission d’Evaluation Inria*.
- Valérie Issarny is member of the Inria DR2 (Research Director position) selection committee.

10.1.7. Research Administration

- Valérie Issarny is scientific coordinator of Inria@Silicon Valley and CityLab@Inria;
- Nikolaos Georgantas is member of the PhD monitoring committee at Inria Paris.

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Master : R. Teixeira, “Methodology for research in networking”, 10h eqTD, M2, UPMC, France

Master : R. Teixeira, “Network Metrology”, 22h CM, M2, UPMC, France

Master: Rachit Agarwal, “Network Science”, semester course at Fundacao Getulio Vargas (FGV), Rio De Janeiro, Brazil

Master: Rachit Agarwal, “Urban data democratization and its application to access urban concepts” as part of “Gestion de données ambiantes et internet des objets”, 9 hours eqTD, Niveau M2, UVSQ, France

E-learning

Valérie Issarny, MOOC *Villes intelligentes : défis technologiques et sociétaux* , 5 weeks, 4,085 registered students in the session of March 2017.

E-learning

Mooc : R. Teixeira, “Internet Measurements: a Hands-on Introduction”, 5 weeks in FUN platform, 1,204 registered students.

10.2.2. Supervision

PhD : Diego da Hora, “Predicting Home Wi-Fi QoE from Passive Measurements on Commodity Access Points”, UPMC, 27/04/2017, R. Teixeira and K. van Doorselaer.

PhD: Georgios Bouloukakis, “Enabling Emergent Mobile Systems in the IoT: from Middleware-layer Communication Interoperability to Associated QoS Analysis”, UPMC, 01/08/2017, Nikolaos Georgantas and Valérie Issarny.

PhD: Amel Belaggoun, “Adaptabilité et reconfiguration des systèmes temps-réel embarquées”, UPMC, 10/10/2017, Valérie Issarny and Ansgar Radermacher (CEA-LISE).

PhD: Vassilis Efthimiou, “Entity resolution in the Web of Data”, University of Crete, 27/09/2017, V. Christophides.

PhD in progress: F. Dilmi, “End-to-end monitoring and diagnosis of video Quality of Experience”, October 2017, R. Teixeira.

PhD in progress: S. Wassermann, “Passive analysis and optimization of Internet Quality of Experience”, October 2017, R. Teixeira.

PhD in progress: S. El Aouad, “Building a personalized summary from movie reviews”, May 2013, V. Christophides, R. Teixeira, P. Perez.

PhD in progress : Radha Pallavali, “Dynamic adaptation of middleware-layer protocols for emergent mobile systems”, UPMC, November 2016, Nikolaos Georgantas and Valérie Issarny.

PhD in progress: Yifan Du, “In-network collaborative crowd-Xing”, UPMC, October 2017, Valérie Issarny and Françoise Sailhan.

10.2.3. Juries

Nikolaos Georgantas was examiner for the PhD thesis of Adrien Carteron, *Une approche événementielle pour le développement de services multi-métiers dédiés à l'assistance domiciliaire*, defended in December 2017, Université de Bordeaux, France, advised by Charles Consel and Nic Volanschi.

Valerie Issarny was examiner for the HDR of Sonia Ben Mokhtar, *Contributions To Building Reliable Distributed Systems*, defended in December 2017, INSA Lyon, France.

RAP2 Team

7. Dissemination

7.1. Promoting Scientific Activities

7.1.1. Journal

7.1.1.1. Member of the Editorial Boards

- *Nicolas Broutin* is member of the steering committee of the international meeting on analysis of algorithms (AofA).
- *Philippe Robert* is Associate Editor of the Book Series “Mathématiques et Applications” edited by Springer Verlag and Associate Editor of the journal “Queueing Systems, Theory and Applications”.

7.1.1.2. Member of the Conference Program Committees

- *Philippe Robert* has been in the TPC of Performance’2017, Caching and Delivery in Wireless Networks Workshop (CCDWN)’2017 and Stochastic Networks’2018.

7.1.2. Conferences

- *Nicolas Broutin* has given lectures at the probability seminar in Marseille on Jan 9, the probability seminar in Nice on March 21, and the annual days of the ANR project GRAAL on May 10.
- *Christine Fricker* has given a talk “Analysis of large scale closed networks with reservation” at the 2017 INFORMS 19th Applied Probability Conference, Northwestern University, USA on 10-12 July, 2017. *Christine Fricker* gave a talk at the day “Filles et math: une équation lumineuse” for 100 high school girls organised by Animath and Femmes et maths (19/12/2017).
- *Wen Sun* has given a talk “A Large Scale Network with Moving Servers” on 5-9 June 2017 at the Sigmetrics workshop MAMA in Urbana-Champaign, Illinois, USA and a talk “An asymptotic study of allocation policies in a large balls and bins model” at the 2017 INFORMS 19th Applied Probability Conference, Northwestern University, USA on 10-12 July, 2017.
- *Guilherme Thompson* has given a talk “Studying an offloading policy for multi-resource Cloud services under Kelly’s Regime” at the 2017 INFORMS 19th Applied Probability Conference, Northwestern University, USA on 10-12 July, 2017. *Philippe Robert* has given a talk “Asymptotics of Stochastic Protein Assembly Models” at the PDMP workshop in Seillac, France, June 2017. He has given a talk “Analysis of a Stochastic Model of Replication in Large Distributed Storage Systems: A Mean-Field Approach” at the ACM Sigmetrics conference, Urbana-Champaign, USA on 5-9 June 2017, and also a talk “A Large Scale Analysis of Unreliable Stochastic Networks” at the 2017 INFORMS 19th Applied Probability Conference, Northwestern University, USA on 10-12 July, 2017. He has given a talk “Stochastic Models of Gene Expression” at the SBF-Kolloquium, Institut für Mathematik, Universität Potsdam, October 2017. He gave a seminar “Asymptotic Studies of Large Distributed systems with Failures” at Inria Rhône-Alpes (Polaris team).

7.1.3. Scientific Expertise

- *Christine Fricker* is member of the jury of agrégation

7.2. Teaching - Supervision - Juries

7.2.1. Teaching

- Master : *Nicolas Broutin* Master Parisien de Recherche en Informatique (MPRI), in the course 2.15 on Analysis of Algorithms.
- *Philippe Robert* Master, Probabilités et Applications, UPMC

7.2.2. Supervision

- *Renaud Dessalles* [17] (January 2017) and *Guilherme Thompson* [2] (December 2017) have defended their PhD thesis.
- *Christine Fricker* got her habilitation to supervise research on 20/11/2017. The manuscript is entitled “Stochastic Networks”. Reviewers: Alexandre Proutière (professor, KTH Stockholm), Isi Mitrani (professor, Newcastle University), Laurent Massoulié (research position, Inria-Microsoft Research leader). Jury: Alexandre Proutière (professor, KTH Stockholm), Laurent Massoulié (Inria-Microsoft Research leader), reviewers, Irina Kurkova (professor, UPMC), Laurent Decreusefond (professor, Telecom Paristech), Carl Graham (research position, CNRS, Ecole Polytechnique).

7.2.3. Juries

Philippe Robert has been a member of the juries of PhD defenses by R. Dessalles (Ecole Polytechnique, January 2017), Y. Petot (Nancy, October 2017), G. Thompson (UPMC, December 2017) and V. Bœuf (Saclay, December 2017).

REGAL Project-Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. General Chair, Scientific Chair

- Marc Shapiro, Organiser of Dagstuhl Workshop on “Data Consistency in Distributed Systems: Algorithms, Programs, and Databases” (19-0117), February 2018.
- Swan Dubois, Co-organizer (with Arnaud Casteigts, University of Bordeaux) of the Second Workshop on Computing in Dynamic Networks, in conjunction with DISC’17, Vienna, Austria, October 20th, 2017.

8.1.2. Scientific Events Selection

8.1.2.1. Member of the Conference Program Committees

Pierre Sens, 28th International Symposium on Software Reliability Engineering (ISSRE’2017), IEEE 46th International Conference on Parallel Processing (ICPP’2017), 16th IEEE International Symposium on Network Computing and Applications (NCA 2017).

Marc Shapiro, Steering Committee of Int. Conf. on Principles of Distributed Systems (OPODIS).

Marc Shapiro, Steering Committee of Workshop on Principles and Practice of Consistency for Distributed Data (PaPoC).

Swan Dubois, 19th Workshop on Advances in Parallel and Distributed Computational Models (APDCM’2017), 5th International Symposium on Computing and Networking (CANDAR’2017).

Luciana Arantes, 16th IEEE International Symposium on Network Computing and Applications (NCA 2017), 13th European Dependable Computing Conference (EDCC 2017), 17th IFIP International Conference on Distributed Applications and Interoperable Systems (DAIS 2017)

8.1.2.2. Reviewer

- Marc Shapiro, reviewer for Int. Conf. on Middleware (MIDDLEWARE 2017).
- Swan Dubois, 31st International Symposium on Distributed Computing (DISC’2017), 24th International Colloquium on Structural Information and Communication Complexity (SIROCCO’2017).
- Luciana Arantes, ACM Symposium on Principles of Distributed Computing (PODC 2017), 23rd International European Conference on Parallel and Distributed Computing (Euro-Par 2017).

8.1.3. Journal

8.1.3.1. Member of the Editorial Boards

Pierre Sens, Associate editor of International Journal of High Performance Computing and Networking (IJHPCN)

Lucian Arantes, Special Issue of Concurrency and Computation: Practice and Experience, Volume 29, January 2017

8.1.3.2. Reviewer - Reviewing Activities

- Marc Shapiro, reviewer IEEE Transactions on Software Engineering.
- Swan Dubois, Theoretical Computer Science (TCS), Theory of Computing Systems (TOCS), International Journal of Networking and Computing (IJNC).
- Luciana Arantes, reviewer Journal of Parallel and Distributed Systems (JPDC).

8.1.4. Invited Talks

Pierre Sens, *Failure detection in large and dynamic distributed systems*. Univ. Curitiba, Brazil. October 2017.

Pierre Sens, *Failure detection in large and dynamic distributed systems*. Keynote speaker, GDR RSD and ASF Winter School on Distributed Systems, Pleynet, Sept Laux, Mars, 2017

Marc Shapiro, *The Antidote Cloud Database*. Comité de pilotage Groupe de Travail Logiciels Libres, Paris, Jan. 2017.

Marc Shapiro, *Just-Right Consistency*. Invited talk, joint session of PaPoC and LADIS workshops, EuroSys April 2017. Belgrade, Serbia.

Marc Shapiro, *AntidoteDB: a developer-friendly, open-source cloud database*. Invited talk, Datageeks Paris, Vente Privée la Plaine-Saint-Denis, May 2017.

Marc Shapiro, *AntidoteDB: a developer-friendly, open-source cloud database*. Invited talk, Open Source Innovation Spring, Paris May 2017.

Marc Shapiro, *Just-Right Consistency*. *La demie-heure de science*, Inria Paris, Oct. 2017.

Marc Shapiro, *AntidoteDB : Une base de données nuage pour la juste cohérence*. Paris Open Source Summit, Saint-Denis, Nov. 2017.

Marc Shapiro, *Semantics and proof of geo-replicated file system*. Invited talk, ENS Ulm, Nov. 2017.

Marc Shapiro, Invited speaker, workshop of Verification of Distributed Systems, Essaouira, May 2018.

8.1.5. Scientific Expertise

Pierre Sens, Project in Indo-French Centre for the Promotion of Advanced Research

Marc Shapiro, reviewer for ERC Starting Grant panel PE-6.

Marc Shapiro, invited for CACM Technical Perspective [18].

Marc Shapiro, invited for several entries in Springer Encyclopedia of Database Systems [36], [37], [38] and Encyclopedia of Big Data Technologies (to appear).

Marc Shapiro, reviewer for Irish Research Council.

Marc Shapiro, reviewer for Indo French Centre for the Promotion of Advanced Research (CE-FIPRA).

8.1.6. Research Administration

Pierre Sens, since 2016: Member of Section 6 of the national committee for scientific research CoNRS

Pierre Sens, since 2012: Member of the Executive Committee of Labex SMART, Co-Chair (with F. Petit) of Track 4, Autonomic Distributed Environments for Mobility.

Pierre Sens, since 2015, officer at scientific research vice presidency UPMC

Pierre Sens, since 2014: Member of Steering Committee of International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD).

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Julien Sopena is Member of “Directoire des formations et de l’insertion professionnelle” of UPMC Sorbonne Universités, France

Master: Julien Sopena is responsible of Computer Science Master’s degree in Distributed systems and applications (in French, SAR), UPMC Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, Jonathan Lejeune, Franck Petit, Pierre Sens, Julien Sopena, Advanced distributed algorithms, M2, UPMC Sorbonne Universités, France

Master: Jonathan Lejeune, Designing Large-Scale Distributed Applications, M2, UPMC Sorbonne Universités, France

Master: Maxime Lorrillere, Julien Sopena, Linux Kernel Programming, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, Jonathan Lejeune, Pierre Sens, Julien Sopena, Operating systems kernel, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, System distributed Programming, M1, UPMC Sorbonne Universités, France

Master: Luciana Arantes, Swan Dubois, Franck Petit, Distributed Algorithms, M1, UPMC Sorbonne Universités, France

Master: Jonathan Lejeune, Julien Sopena, Client-server distributed systems, M1, UPMC Sorbonne Universités, France

Licence: Pierre Sens, Luciana Arantes, Julien Sopena, Principles of operating systems, L3, UPMC Sorbonne Universités, France

Licence: Swan Dubois, Initiation to operating systems, L3, UPMC Sorbonne Universités, France

Licence: Jonathan Lejeune, Oriented-Object Programming, L3, UPMC Sorbonne Universités, France

Licence: Swan Dubois, Franck Petit, Advanced C Programming, L2, UPMC Sorbonne Universités, France

Licence: Swan Dubois, Sébastien Monnet, Introduction to operating systems, L2, UPMC Sorbonne Universités, France

Licence: Mesaac Makpangou, C Programming Language, 27 h, L2, UPMC Sorbonne Universités, France

Ingénieur 4ème année : Marc Shapiro, Introduction aux systèmes d'exploitation, 26 h, M1, Polytech UPMC Sorbonne Universités, France.

8.2.2. Supervision

PhD: Antoine Blin, "Execution of real-time applications on a small multicore embedded system", 30 January 2017, Gilles Muller (Whisper) and Julien Sopena, CIFRE Renault

PhD: Tao Thanh Vinh, "Ensuring Availability and Managing Consistency in Geo-Replicated File Systems", UPMC, CIFRE, 8 December 2017, Marc Shapiro, Vianney Rancurel (Scality).

PhD: Rudyar Cortes, "Un Environnement à grande échelle pour le traitement de flots massifs de données," UPMC, funded by Chile government, 6 April 2017, Olivier Marin, Luciana Arantes, Pierre Sens.

PhD in Progress: João Paulo de Araujo, "L'exécution efficace d'algorithmes distribués dans les réseaux véhiculaires", funded by CNPq (Brésil), since Nov.2015, Pierre Sens and Luciana Arantes.

PhD in progress: Sébastien Bouchard, "Gathering with faulty robots", UPMC, since Oct. 2016, Swan Dubois, Franck Petit, Yoann Dieudonné (University of Picardy Jules Verne)

PhD in progress: Marjorie Bournat, "Exploration with robots in dynamic networks", UPMC, since Sep. 2015, Swan Dubois, Franck Petit, Yoann Dieudonné (University of Picardy Jules Verne)

PhD in progress: Damien Carver, "HACHE : Horizontal Cache cHorEgraphy - Toward automatic resizing of shared I/O caches.", UPMC, CIFRE, since Jan. 2015, Sébastien Monnet, Pierre Sens, Julien Sopena, Dimitri Refauvelet (Magency).

PhD in Progress: Florent Coriat, "Géolocalisation et routage en situation de crise" since Sept 2014, UPMC, Anne Fladenmuller (NPA-LIP6) and Luciana Arantes.

CIFRE PhD in progress: Guillaume Fraysse, Orange Lab - Inria, “Ubiquitous Resources for Service Availability” Since Jul. 2017, advised by Pierre Sens, Imen Grida Ben Yahia (Orange-Lab) , Jonathan Lejeune, Julien Sopena.

PhD in progress: Lyes Hamidouche, “Data replication and data sharing in mobile networks”, UPMC, CIFRE, since Nov. 2014, Sébastien Monnet, Pierre Sens, Dimitri Refauvelet (Magency).

PhD in progress: Denis Jeanneau, “Problèmes d’accord et détecteurs de défaillances dans les réseaux dynamique,” UPMC, funded by Labex Smart, since Oct. 2015, Luciana Arantes, Pierre Sens.

PhD in progress: Francis Laniel, UPMC, since Sept. 2017. Advised by Marc Shapiro, Julien Sopena, Jonathan Lejeune. “Vers une utilisation efficace de la mémoire non volatile pour économiser l’énergie.”

PhD in progress: Ilyas Toumlilt, UPMC, since Sept. 2017, advised by Marc Shapiro. “Bridging the CAP gap all the way to the edge.”

PhD in progress: Alejandro Z. Tomsic, UPMC, since Feb. 2014, Marc Shapiro. “Computing over widely-replicated data in a hybrid cloud.”

CIFRE PhD in progress: Dimitrios Vasilas, UPMC, “Indexing in large-scale storage systems.” Since Sept. 2016, advised by Marc Shapiro.

PhD in progress: Gauthier Voron, “Big-Os : un OS pour les grands volumes de données,” UPMC, since Sep. 2014, Gaël Thomas, Pierre Sens.

8.2.3. *Juries*

Pierre Sens was the reviewer of:

- Jalil Boukhobza, HDR, UBO, Brest
- Adrien Lebre, HDR, EMN, Nantes
- Cédric Tedeschi, HDR, IRISA, Rennes
- Ismael Cuadrado-Cordero, PhD, IRSIA, Rennes
- Hana Teyeb, PhD, Telecom SudParis, Evry

Pierre Sens was Chair of

- Georgios Bouloukakis, PhD, UPMC-Inria, Paris, (Advisor: V. Issarny)
- José Manuel Rubio-Hernan, PhD, Telecom SudParis, Evry (Advisor: J. Garcia-Alfaro)
- Luis Eduardo Pineda Morales, PhD, Irisa, Rennes (Advisors: F. Desprez, A. Lebre)

Marc Shapiro was a member of the PhD defense committee of Paolo Viotti, EURECOM, April 2017.

8.3. Popularization

Jonathan Lejeune and Julien Sopena animated an activity during the [Science Festival 2017 at UPMC](#)

WHISPER Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. Member of the Organizing Committees

- Gilles Muller: PLOS 2017

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- Julia Lawall: PLOS 2017

10.1.2.2. Member of the Conference Program Committees

- Gilles Muller: Usenix ATC 2017, DSN 2017, Systor 2017,
- Julia Lawall: ICSE NIER, ML workshop, OCaml workshop, SPLASH workshops.
- Pierre-Évariste Dagand: HOPE workshop

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- Julia Lawall: Editorial board of Science of Computer Programming (2008 - present).

10.1.3.2. Reviewer - Reviewing Activities

- Gilles Muller: IEEE Transactions on Computer Systems
- Julia Lawall: Computer Languages, Empirical Software Engineering, IEEE Transactions on Reliability
- Pierre-Évariste Dagand: Journal of Functional Programming, Journal of Logical and Algebraic Methods in Programming, Journée Francophones des Langages Applicatifs

10.1.4. Invited Talks

- Gilles Muller: University of North Carolina, Inria Grenoble, University of Bordeaux.
- Julia Lawall: Colloquium Jacques Morgenstern Sophia Antipolis, Vrije Universiteit Brussel, University of Copenhagen, 2017 FSD Meeting.
- Pierre-Évariste Dagand: École Normale Supérieure de Cachan

10.1.5. Research Administration

- Pierre-Évariste Dagand: Member of the steering committee for the Colloquium d'Informatique de L'UPMC Sorbonne Universités, organizer of the Colloquium of Philippa Gardner (March 2017) and Timothy Roscoe (November 2017).
- Julia Lawall: IFIP TC secretary (2012 - present). Elected member of IFIP WG 2.11.
Hiring committees: UPMC (PR)
Board member of Software Heritage (<https://www.softwareheritage.org/>).
Organized the Colloquium d'Informatique de L'UPMC Sorbonne Universités of Simon Peyton Jones (May 2017)

- Gilles Muller: EuroSys steering committee (2013-2017), elected member of IFIP WG 10.4 (Dependability), representative of Inria in Sorbonne University's advisory committee for research, member of the project committee board of the Inria Paris Center, member of the Paris committee for allocating post-docs, PhD stipends and sabbaticals.
Hiring committees: University of Grenoble (MdC).
- Bertil Folliot: Elected member of the IFIP WG10.3 working group (Concurrent systems)

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Professional Licence: Bertil Folliot, Programmation C, L2, UPMC, France
- Professional Licence: Bertil Folliot, Lab projects, L2, UPMC, France
- Licence: Pierre-Évariste Dagand, Distributed cooperating objects, L3, UPMC, France
- Master: Pierre-Évariste Dagand, Specification and Validation of Programs, M2, UPMC, France
- Licence: Pierre-Évariste Dagand, INF311: Introduction to Programming, L1, École Polytechnique, France

10.2.2. Supervision

- PhD in progress : Mariem Saeid, soutenance en 2018, Jens Gustedt (Camus), Gilles Muller.
- PhD in progress : Cédric Courtaud, CIFRE Thalès, 2016-2019, Gilles Muller, Julien Sopéna (Regal).
- PhD in progress : Redha Gouicem, 2016-2019, Gilles Muller, Julien Sopéna (Regal).
- PhD in progress : Darius Mercadier, 2017-2020, Pierre-Évariste Dagand, Gilles Muller.
- PhD in progress : Lucas Serrano, 2017-2020, Julia Lawall.

10.2.3. Juries

- Gilles Muller: Reporter of the HDR of A. Tchana (U. Toulouse), member of the HDR of S. Ben Mokhtar (U. of Lyon).
- Julia Lawall: Vinh Tao (PhD, UPMC, president), Marcelino Cancio Rodriguez (PhD, University of Rennes, reporter), Victor Allombert (PhD, Paris Est-Creteil, reporter), Reinout Stevens (PhD, VUB, reporter).

10.3. Popularization

- Julia Lawall: Coordinator of the Outreachy internship program for the Linux kernel. Outreachy provides remote 3-month internships twice a year for women and other underrepresented minorities on open source projects. Julia Lawall also mentored Bhumika Goyal as part of this program.
- Julia Lawall, "Fast and Precise Retrieval of Forward and Back Porting Information for Linux Device Drivers", Open Source Summit Europe, October 2017.
- Julia Lawall, "JMake: Dependable Compilation for Kernel Janitors", Open Source Summit Europe, October 2017.
- Julia Lawall, "Panel Discussion: Outreachy Kernel Internship Report" (moderator), Open Source Summit Europe, October 2017.
- Julia Lawall, "Overview of Coccinelle", Linux Lund Conference, May 2018.
- Julia Lawall, "Constification of Linux kernel structures", OSADL Networking Day, May 2017.

ALMANACH Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- DSBE: Co-Chair and coorganizer of the summerschool manuSciences '17, Fréjus, France, 10-15 September 2017.
- LR, DSBE: Coorganizers of the France/Israel DH conference, Jerusalem, 27 February-1 March 2017.
- DSBE: Co-chair and coorganizer of the workshop Cambridge-PSL-Lausanne, Paris, France, 11-12 March 2017.
- DSBE: Co-chair and coorganizer of the workshop FSP-Patrima-EPHE on Scientific Approaches to Inscribed Objects, Ministry of Culture and Communication, Paris, France, 24 January, 2017.

10.1.1.2. Member of the Organizing Committees

- LR, BS: Members of the Organizing Committee of the Lexical Data Masterclass, Berlin, 4-8 December 2017
- CR: Member of the Organizing Committee of the conference “La Part de l’ombre, Action clandestine et imaginaire du complot, XXe-XXIe siècles”, Paris, France, 18-19 May 2017
- MP: Member of the Organizing Committee of the conference Text as a resource. Text mining in Historical Science, Paris, France, 29-30 June 2017.
- MP: Member of the Organizing Committee of the masterclass Penser/ Utiliser les données de la recherche, Paris, France, 25-29 September 2017.
- DSBE: Member of Organizing Committee for the Poster Session on Digital Humanities at the World Congress of Jewish Studies, Jerusalem, 6-10 August 2017.

10.1.2. Scientific Events Selection

10.1.2.1. Chair of Conference Program Committees

- MB, Program chair of the 8th ACM-SoICT, 2017, Nha Trang, Vietnam.

10.1.2.2. Member of the Conference Program/Scientific/Reviewing Committee

- LR: Member of the Reviewing Committee of the following conferences: DHd 2017, DATeCH2017, ACL 2017, TOTh 2017, TPDL 2017, MDQual 2017
- EVdLC: Member of the Reviewing Committee of ACL'17 (Tagging, Chunking, Syntax and Parsing area), DaTeCH'17 (co-reviewer), TMPA-2017 (co-reviewer)
- EVdLC: Member of the Scientific, Programm or Reviewing Committee of EMNLP'17, DepLing'17, EPIA'17, LATA'18, Games4NLP'17, ToTH'17, LREC'18.
- DS: Member of the Scientific, Programm or Reviewing Committee of ACL'17, EMNLP'17, CoNLL'17, TALN2017, LREC2018, TLT #15, LAW 2017, W-NUT 2017
- DSBE: Member of the Program Committee for HIP'17, member of the Reviewing Committee of HIP 2017
- BS: Member of the Program, Scientific or Reviewing Committee of the following conferences and workshops: *SEM 2017, CoNLL 2017, DeriMo 2017, EACL 2017, LAW XI (2017), LREC 2018, WRDTM 2017

- CR: Member of the Reviewing Committee of DH Nord and DH 2018
- MP: Member of the Reviewing Committee of the following conferences: DH Nord, Digital Humanities in the Nordic Countries, DH 2018

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

- LR: Member of the Editorial Board of the following journals: *JDMDH*, *ACM JOCCH*
- LR: Member of the Scientific/Advisory Committee of the following journals: *Revue Humanités Numériques*, *Journal of the TEI*, *Language Resources and Evaluation*
- DSBE: Member of the Advisory Committee of the following journals: *Jewish Studies Quarterly*, *Henoch*, *Biblical Annals*, *Digital Paleography and Book History*, *Cultural Heritage Digitization*, *Marginalia*
- DSBE: Member of the Advisory Committee of the book series “Humanités numériques et patrimoine” (U. Grenoble, E. Pierazzo)
- BS, together with Olivier Bonami (LLF), was Guest Editor for a thematic issue of the journal *Morphology* on computational methods for descriptive and theoretical morphology [10].

10.1.3.2. Reviewer - Reviewing Activities

- BS: Reviewer for the following journals: *Computational Linguistics*, *Journal of Language Modelling*, *Arabian Journal for Science and Engineering*, *wék^Wos*
- BS: Reviewer for the MIT Press
- DS: *Computational Linguistics Journal*, *Transactions on Asian and Low-Resource Language Information Processing Journal*

10.1.4. Invited Talks

- Héctor Martínez Alonso gave a talk at the Inria Paris Junior Seminar, Paris, France
- CR, “Traces de l’héroïsme, les plaques commémoratives de la Résistance parisienne”, Plaques commémoratives dans l’espace parisien, Paris, France
- LF, CR, “Grobid for Humanities, when engineering meets History”, DHIHA, Paris, France
- CR, “La Libération du Sud-Est parisien, un mouvement populaire, CLIO94, Créteil, France
- CR, “Traces de l’héroïsme, les plaques commémoratives de la Résistance parisienne”, Plaques commémoratives dans l’espace parisien, Paris, France
- MP, “Faciliter l’accès des chercheurs aux données patrimoniales. La Charte de réutilisation des données”, séminaires Nouveaux champs d’étude en droit du patrimoine culturel, Le Mans, France, 14 December 2017.
- MP, “La TEI et les historiens. Le projet Time-Us : Travail, rémunération, textile et foyer (XVIIe-XXe siècles)”, Edition électronique & TEI : enjeux, pratiques & perspectives, 4ème journée dayClic TEI, Le Mans, France
- DSBE: ‘Automatic layout analysis and transcription of medieval manuscripts’, Mondes anciens nouveaux regards, AnHIMA, Paris, 8 June 2017.
- DSBE: “Digital Humanities”, University of Haifa, 10 June 2017.
- DSBE: “Automatic lectionary analysis with the database Thesaurus Antiquorum Lectionarium Ecclesiae Synagogaeque”, Hagiographico-homiletic collections in Greek, Latin and Oriental Manuscripts –Histories of Books and Text Transmission in a comparative perspective, Hamburg, 27 June 2017.
- DSBE: “Teaching DH and Jewish Studies”, Hamburg, 5 September 2017.
- DSBE: “Automatic layout analysis and transcription of medieval Hebrew manuscripts”, Jerusalem, 22 June 2017.

- DS: "Robust Data Driven Parsing of Deep Syntax Graph: Syntax Is Not Dead Yet", Naverlabs, ex-Xerox, Grenoble, December 8th, 2017.

10.1.5. Leadership within the Scientific Community

- LR: President of the board of directors of DARIAH
- LR: Member of the board of directors of the TEI consortium
- LR: President of ISO committee TC 37 (Language and terminology)
- EVdLC: Chairman of the ACL special interest group SIGPARSE
- BS: Member, Deputy Treasurer and Member of the Board of the Société de Linguistique de Paris (since Dec. 2017)
- DS: Board member of the French NLP society (Atala, 2017-2020), program chair of the "journée d'études".
- Member of the ACL's BIG (Broad Interest Group) Diversity group.

10.1.6. Scientific Expertise

- EVdLC: Reviewer for an European ERC proposal and for an European COST proposal
- BS: Reviewer for the ANR (CE32 committee)
- EVdLC: Member of the selection committee for the call for projects "Langues et numérique 2017" organized by DGLFLF (Délégation générale à la langue française et aux langues de France)
- DSBE: Reviewer for a proposal at the SNF.

10.1.7. Research Administration

- XY: [description]
- DSBE: Director of the DH Programme of the EPHE.
- BS: Member of the Board of Inria Paris's Scientific Committee ("Comité des Projets")
- BS: Member of the International Relations Working Group of Inria's Scientific and Technological Orientation Council (COST-GTRI)
- BS: Deputy Head of the research strand on Language Resources of the LabEx EFL (Empirical Foundations of Linguistics), and is therefore a deputy member of the Governing Board of the LabEx; BS and DS are in charge of several research operations in the LabEx

10.1.8. Teaching

Licence: Djamé Seddah, "Certificat Informatique et Internet", 30h, L1-L2-L3, Université Paris Sorbonne, France

Licence: Djamé Seddah, "Programmation et algorithmique en Java", 50h, L2, Université Paris Sorbonne, France

Licence: Loïc Grobol, "Informatique et Industries de la Langue", 22h, L2, Université Sorbonne Nouvelle, France

Licence: Loïc Grobol, "Introduction aux Humanités Numériques", 15h, L2, Université Sorbonne Nouvelle, France

Master: Djamé Seddah, "Modèles pour la linguistique computationnelle", 36h, M2, Université Paris Sorbonne, France

Master: Djamé Seddah, "Modèles pour la linguistique computationnelle", 36h, M1, Université Paris Sorbonne, France

Master: Djamé Seddah, "Programmation générique et C++", 26h, M1, Université Paris Sorbonne, France

Master: Djamé Seddah, “Programmation réseau et Java”, 26h, M1, Université Paris Sorbonne, France

Master: Djamé Seddah, “Traduction automatique”, 30h, M2, Université Paris Sorbonne, France

Master: Laurent Romary, “Governance challenges in setting up and running an ERIC”, 1h30, Webinar Rltrain – Executive Master in Management of Research Infrastructures at University of Milano-Bicocca, 24 November 2017

Master: Marie Puren, Charles Riondet, “Formation à la TEI pour des documents historiques”, 3 heures, M1-M2, Université Aix-Marseille, France, 19 October 2017

Master: Marie Puren, “Valorisation de la recherche - Humanités numériques”, 4 X 3 heures, M2 Histoire, Université Versailles-Saint-Quentin, Rennes, France, January-March 2017.

Master/PhD: Daniel Stökl Ben Ezra, “Approches numériques aux textes du judaïsme ancien”, 26 heures, M2/PhD, EPHE

Master/PhD: Marc Bui, “Introduction à la programmation Python pour les chercheurs en SHS” (2x24h) niveau M1/M2/PhD, EPHE (EPHE students and Master humanités numériques ENC-ENS-EPHE students)

Master class, Daniel Stökl Ben Ezra, “Simple and Advanced Image Treatment for Manuscript Analysis”, 2h, manuSciences summer school, 11 September 2017

Master class: Laurent Romary, “Overview of lexical models and introduction to the TEI dictionary chapter”, 1h30, Lexical Master Class, Berlin, 5 December 2017

Master class: Laurent Romary, “Querying and presenting TEI dictionary data with XSLT”, 1h30, Lexical Master Class, Berlin, 6 December 2017

Master class: Marie Puren, “Data management practices and recommendations. Managing, sharing and preserving linguistic data”, 1h30, Lexical Master Class, Berlin, 7 December 2017

Master class: Mohamed Khemakhem, “GROBID-Dictionaries”, 4 X 3 heures, Lexical Master Class, Berlin, 5-7 December 2017

EPHE, Marc Bui, “Introduction à la conception des bases de données avec SQL” (24h)

EPHE, Marc Bui, “La mise en page avec LaTeX pour les chercheurs en SHS” (12h)

IES Inria, Laurent Romary, “Formation à la TEI, XPath et XSLT pour HAL”, 3 journées Centre Inria Paris

IES Inria, Marie Puren, Charles Riondet, “Gestion des données de la recherche”, 7 heures, Centre Inria Paris, France, 31 March 2017

INIST, Marie Puren, “Créer un plan de gestion des données” et “Les métadonnées dans un DMP”, 2h30, INIST, Vandoeuvre-Lès-Nancy, France, 6 July 2017.

INIST: Laurent Romary, “Formation à la TEI pour les documents scientifiques”, 2 X 2 journées, INIST, Vandoeuvre Lès Nancy, France

URFIST, Marie Puren, “Données de recherche : le Plan de Gestion des Données”, 1 journée, URFIST, Rennes, France, 1st June 2017

10.1.9. Supervision

PhD in progress: Loïc Grobol, “Reconnaissance automatique de chaînes de coréférences en français par combinaison d’apprentissage automatique et de connaissances linguistiques”, “Université Sorbonne Nouvelle”, started in Oct. 2016, supervised by Isabelle Tellier (main supervisor), Éric de La Clergerie and Marco Dinarelli

PhD in progress: Mathilde Regnault, “Annotation et analyse de corpus hétérogènes”, “Université Sorbonne Nouvelle”, started in Oct. 2017, supervised by Sophie Prévost (main supervisor), Isabelle Tellier, and Éric de la Clergerie

PhD in progress: Jack Bowers, “Technology, description and theory in language documentation: creating a comprehensive body of multi-media resources for Mixtepec-Mixtec using standards, ontology and Cognitive Linguistics”, October 2016, EPHE, Laurent Romary

PhD in progress: Axel Herold, “Automatic identification and modeling of etymological information from retro-digitized dictionaries”, October 2016, EPHE, Laurent Romary

PhD in progress: Mohamed Khemakhem, “Structuration automatique de dictionnaires à partir de modèles lexicaux standardisés”, September 2016, Paris Diderot, Laurent Romary

PhD in progress: Antony Perrot, “Qumran Opisthographs”, started in Oct 2015, EPHE, PSL, supervised by Daniel Stökl Ben Ezra

PhD in progress: Jérémie Bosom, “Big data, internet des objets, fouille de données: élaboration de services intelligents pour le pilotage industriel”, started in Oct 2015, EPHE, PSL, supervised by Marc Bui

PhD in progress: Dogu Kaan Eraslan, “Les relations entre Milet et l’Égypte à la Basse Époque (664-332 av. J.-C.)” (with a strong emphasis on computational humanity approaches for both encoding information and extracting information, e.g. with neural image processing techniques on ancient documents), started in Oct 2015, EPHE, PSL, co-supervised by Michel Chauveau and Marc Bui

10.1.10. *Juries*

- EVdLC: member of the PhD committee for Jakub Waszczuk at University of Blois on June 26th (Title: “Leveraging MWEs in practical TAG parsing: towards the best of the two worlds”; Supervisors: Agata Savary and Yannick Parmentier)
- MB: member of the PhD committee for Karim Sayadi at Université Paris 6 en partenariat avec EPHE on March 28th (Title: “Classification du texte numérique et numérisé. Approche fondée sur les algorithmes d’apprentissage automatique”; Supervisor: Marc Bui)
- EVdLC: examiner and member of the Master 2 jury for Jean Argouarc’h (Master de sciences cognitives, Paris Diderot; title: “Semantic models for analysis of brain activation during naturalistic text listening”; Supervisor: C. Pallier)
- BS: member of the recruiting committee for a Maître de Conférences position (NLP) at Université Paris Sorbonne

10.2. Standardization activities

10.2.1. *ISO TC 37/ SC4*

- Mohamed Khemakhem and Laurent Romary: Project leaders of the ISO 24613-4 LMF “TEI Serialisation”
- Jack Bowers: Project leader of the ISO 24613-3 LMF “Etymology Extension”
- Éric de la Clergerie: Participation to AFNOR meetings, in relation with TC37/ SC4

10.2.2. *COST ENEL & DARIAH*

- Laurent Romary, Mohamed Khemakhem, Axel Herold and Jack Bowers: Experts of a joint lexical standardisation action “TEI Lex0: Towards Best TEI P5 Encoding Practices”

10.3. Popularization

- BS, jointly with Emmanuel Dupoux (EHESS & ENS), gave a talk on “NLP and AI” as part of the seminar on AI organised by the Institut de l’École Normale Supérieure (21 June 2017)
- EVdLC and BS presented ALMAAnaCH’s research (as well as its spin-off opensquare) at the “Rencontres Inria-industries” (forum bringing together Inria and companies) (18 November 2017)

- DSBE and BS: participation to a meeting on Digital Humanities bringing together researchers from the PSL ComUE, the University of Cambridge (UK) and the EPFL (Switzerland) (11 May 2017)
- BS: with Jean Ponce, Isabelle Ryl and H  l  ne Robak, represented the Inria Paris research center at the forum organised for the 30th anniversary of the DRM (the French Military Intelligence Office) (23 March 2017)
- BS and DSBE: talks during the NLP edition of the “Paris Sciences et Data” conference series.
- EVdLC: talk at the opening of the Math Olympiades 2017 about “Une palette math  matique pour appr  hender le langage” (Versailles, January 25 2017)
- EVdLC: talk at the GFII DIXIT Seminar on “IA et Traitement Automatique des Langues (TAL) : Quel panorama ?” (Paris, February 24th 2017); member of the organizing committee of the forum 2017 of the GFII and panelist of the session on “de l’IA washing    la r  alit   industrielle, quels sont les contours du renouveau actuel de l’IA ?” (December 5th, 2017)
- EVdLC: co-animator of a new GFII Working Group “Technologies de la Connaissance”, with a focus on AI
- Lo  c Grobol: participation to the 18th meeting on “Culture & Jeux Math  matiques” organized by AMIES
- MP, LR : Webinar on “Humanities and Open Science: Workflows and tools for publishing, licensing, versioning, identifiers, archiving, software...” for the International Open Access Week, 26 October 2017.
- DS gave a talk on “From Noisy Questions to Minecraft Texts: Annotation Challenges in Extreme Syntax Scenarios” at the NLP Paris Meetup, Paris, November 22th, 2017.

COML Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

Zero Resource Challenge 2017, held as a special session of EEE ASRU 2017, Okinawa.

10.1.1.2. Member of the Organizing Committees

Executive committee of SIGMORPHON (Association for Computational Linguistics Special Interest Group, <http://www.sigmorphon.org/>).

10.1.2. Scientific Events Selection

10.1.2.1. Reviewer

Invited editor for international conferences: Interspeech, NIPS, ACL, etc. (around 5-10 papers per conferences, 2 conferences per year)

10.1.3. Journal

10.1.3.1. Member of the Editorial Boards

Member of the editorial board of: *Mathématiques et Sciences Humaines*, *L'Année Psychologique*, *Frontiers in Psychology*.

10.1.3.2. Reviewer - Reviewing Activities

Invited Reviewer for *Frontiers in Psychology*, *Cognitive Science*, *Cognition*, *Transactions in Acoustics Signal Processing and Language*, *Speech Communication*, etc. (around 4 papers per year)

10.1.4. Invited Talks

- Learning in Machines and Brains (CIFAR) invited talk, 2017, Paris.
- CBMM (Center for Brain Mind and Machine) Workshop on Speech representation, perception and recognition. Invited talk. Feb 02-03, 2017, MIT

10.1.5. Scientific Expertise

E. Dupoux is invited expert for ERC, ANR, and other granting agencies (around 2 per year).

10.1.6. Research Administration

Executive committee of the Foundation Cognition, the research programme IRIS-PSL "Sciences des Données et Données des Sciences", the industrial chair Almerys (2016-) and the collective organization DARCLE (www.darcle.org).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

Licence : E. Dupoux, "Introduction to the cognitive science of language", 8h, L2, PSL, France

Master : E. Dupoux, "Theoretical Cognitive Science: Connections and symbols", 8h, M1/M2, PSL, Paris 5, Paris France

Master : E. Dupoux, "Cognitive Engineering", 80h, M2, ITI-PSL, Paris France

Doctorat : E. Dupoux, "Computational models of cognitive development", 32 h, Séminaire EHES, Paris France

10.2.2. Supervision

Six PhD theses are currently conducted in the team. Two are programmed to be defended in september 2018.

10.2.3. *Juries*

E. Dupoux participated in the PhD jury of Martin Felipe Perez-Guevara on novembre 29th, 2017 at UPMC (supervisor: C. Pallier).

10.3. Popularization

E. Dupoux talked in two general public conferences on speech recognition, one organised par France is AI (oct 17, 2017) and the other by Paris Sciences& Data (dec 7, 2017). The public was composed of entrepreneurs in machine learning. He also gave a training course in speech and language technology organised by the Institut de l'Ecole Normale (june 21) aimed at information technology professionals. He gave three interview on the limits of deep learning in general public outlets (Le Monde, La Recherche⁰, Usine Nouvelle).

N. Zeghidour did a high level presentation of AI to 30 students and 8 teachers from Sciences-Po and Ecole 42 during the Policy Innovation Lab⁰ following the visit of Facebook's COO. He has been a Mentor (technical advisor) for 9 European start-ups during a pitching event for the IBM Watson AI Xprize⁰. He animated a booth on AI at the Platform Meetup Paris of Facebook. He gave an interview to Libération included in a 100 page special issue on AI⁰. He taught a class on Speech Recognition as part of the Facebook AI Masterclass, a class for developers located at Ecole 42 and broadcasted in developer circles over 25 cities of Europe, Middle-East and Africa with 850 people attending, followed by a live Q&A session with several of these cities over video-conference.

⁰<http://www.larecherche.fr/lintelligence-artificielle-a-lassaut-des-labos>

⁰<http://www.sciencespo.fr/public/en/policy-lab/public-policy-incubator>

⁰<https://ai.xprize.org/>

⁰http://www.liberation.fr/voyage-au-coeur-de-lia/2017/12/20/en-kiosque-notre-hors-serie-voyage-au-coeur-de-l-ia_1617896

RITS Project-Team

9. Dissemination

9.1. Promoting Scientific Activities

9.1.1. Scientific Events Organisation

9.1.1.1. Member of the Organizing Committees

Mohammad Abualhoul and Fawzi Nashashibi organized a workshop within the framework of the European project AUTOCITS "Regulation Study for Interoperability in the Adoption of Autonomous Driving in European Urban Nodes". Date: 05/04/2017 - Inria Paris. <https://project.inria.fr/autocits/autoc-its-workshop-paris/>

9.1.2. Scientific Events Selection

9.1.2.1. Member of the Conference Program Committees

Fawzi Nashashibi: IEEE Intelligent Vehicles Symposium - IV 2017, IEEE 20th International Conference on Intelligent Transportation Systems - ITSC 2017.

9.1.2.2. Reviewer

Carlos Flores: IEEE 20th International Conference on Intelligent Transportation Systems - ITSC 2017.

Francisco Navas: IEEE Intelligent Vehicles Symposium - IV 2017, IEEE 20th International Conference on Intelligent Transportation Systems - ITSC 2017.

Anne Verroust-Blondet: IEEE Intelligent Vehicles Symposium - IV 2017, IEEE 20th International Conference on Intelligent Transportation Systems - ITSC 2017.

9.1.3. Journal

9.1.3.1. Member of the Editorial Boards

Guy Fayolle: associate editor of the journal *Markov Processes and Related Fields*

Fawzi Nashashibi: associate editor of the journal *IEEE Transactions on Intelligent Vehicles* and of *IEEE Transactions on Intelligent Transportation Systems*.

Fawzi Nashashibi: guest editor with Erwin Schoitsch (AIT) of *ERCIM News* N°109 on "Autonomous Vehicles".

9.1.3.2. Reviewer - Reviewing Activities

Guy Fayolle: *AAP*, *MPRF*, *PTRF*, *QUESTA*, *European Journal of Combinatorics*, *JSP*, *Physica A*, *Springer Science*.

Jean-Marc Lasgouttes: *IEEE Transactions on Knowledge and Data Engineering*, *IEEE Transactions on Intelligent Transportation Systems*.

Anne Verroust-Blondet: *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *The Visual Computer*.

9.1.4. Invited Talks

Raoul de Charette: Talk on "Computer Vision" at Adomik (artificial intelligence software company), Paris, November 29th.

Guy Fayolle was a keynote speaker at the conference at the ACMPT-2017 Conference <http://acmpt.moscow/>, (*Analytical and Computational Methods in Probability Theory and its Applications*), held in Moscow State University and in RUDN University, Moscow, 23-27th October 2017. His talk presented the substance of the article [21].

Fawzi Nashashibi was a keynote speaker at IEEE International Conference on Intelligent Vehicles Symposium - IV 2017, *Latest Advancements in Intelligent Vehicles Research in Europe*, held in June 2017.

Fawzi Nashashibi was a keynote speaker at IEEE International Conference on Vehicular Electronics and Safety (ICVES), *Automated vehicles in urban environments: challenges and technical solutions*, June 2017.

Fawzi Nashashibi was a keynote speaker at Convergence Technology Symposium 2017 (ConTech 2017) *Autonomous Driving, Future Mobility, Future Smart City with Autonomous Driving*, held in June 2017, at the AICT in Suwon, Korea.

Fawzi Nashashibi was a keynote speaker at IEEE International Conference on Intelligent Computer Communication and Processing (ICCP), *A functional architecture for the navigation of an autonomous vehicle*, held in September 2017.

9.1.5. Scientific Expertise

Guy Fayolle is scientific advisor and associate researcher at the *Robotics Laboratory of Mines ParisTech*.

Jean-Marc Lasgouttes is member of the *Conseil Académique* of Université Paris-Saclay.

Anne Verroust-Blondet is member of the COST-GTRI committee at Inria and of the "emploi scientifique" committee of Inria Paris.

9.1.6. Research Administration

Jean-Marc Lasgouttes is a member of the *Comité Technique Inria*.

Guy Fayolle is a member of the working group IFIP WG 7.3.

Fawzi Nashashibi is a member of the international Automated Highway Board Committee of the TRB (AHB30). He is a member of the Board of Governors of the VEDECOM Institute representing Inria and of the Board of Governors of MOV'EO Competitiveness cluster representing Inria.

Anne Verroust-Blondet is the scientific correspondent of the European affairs and of the International relations of Inria Paris.

9.2. Teaching - Supervision - Juries

9.2.1. Teaching

Licence: Fawzi Nashashibi, "Programmation avancée", 84h, L1, Université Paris-8 Saint-Denis, France.

Master: Raoul de Charette, "Computer Vision for Autonomous Driving", 32Hr, Master 2, University of Simon Bolivar, Venezuela, December 2017.

Master: Carlos Flores, "Control for Autonomous Driving", 10Hr, Master 2, University of Simon Bolivar, Venezuela, December 2017.

Master: Jean-Marc Lasgouttes, "Analyse de données", 54h, second year of Magistère de Finance (M1), University Paris 1 Panthéon Sorbonne, France.

Master: Luis Roldao Jimenez, "Point Cloud Processing for Autonomous Driving", 7Hr, Master 2, University of Simon Bolivar, Venezuela, December 2017.

Master: Carlos Flores and Anne Verroust-Blondet, "Le véhicule autonome. Présentation des recherches de l'équipe-projet RITS", 1.5 h, 2nd year, Ecole des Ponts ParisTech, France, September 2017.

Master: Fawzi Nashashibi, "Image synthesis and 3D Infographics", 12h, M2, INT Télécom Sud-Paris.

Master: Fawzi Nashashibi, "Obstacle detection and Multisensor Fusion", 4h, M2, INSA de Rouen.

Master: Fawzi Nashashibi, "Perception and Image processing for Mobile Autonomous Systems", 12h, M2, University of Evry.

Doctorat: Raoul de Charette, "Introduction, Data Visualization and Signal Processing in Python", 21Hr, class organized with Paris Science et Lettres, France, January 2017.

Doctorat: Jean-Marc Lasgouttes, "Analyse de données fonctionnelles", 31.5h, Mastère Spécialisé "Expert en sciences des données", INSA-Rouen, France

9.2.2. Supervision

PhD: David González Bautista, "Architecture fonctionnelle pour la planification des trajectoires des véhicules automatisés dans des environnements complexes", Mines ParisTech, April 2017, supervisor: Fawzi Nashashibi.

PhD in progress: Zayed Alsayed, "Système de localisation redondant en environnement extérieur ouvert pour véhicule urbain automatique", Télécom ParisTech, October 2014, supervisor: Anne Verroust-Blondet, co-supervisor: Guillaume Bresson.

PhD in progress: Pierre de Beaucorps, "Autonomous vehicle: behavior prediction and Interaction with road users", UPMC Paris, January 2016, supervisor: Anne Verroust-Blondet, co-supervisor: Fawzi Nashashibi.

PhD in progress: Carlos Flores, "Analysis and design of cooperative systems for trains of green cars", Mines ParisTech, December 2015, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés.

PhD in progress: Fernando Garrido, "Optimal trajectory generation for autonomous vehicles in urban environments", Mines ParisTech, November 2014, supervisor: Fawzi Nashashibi, co-supervisors: Vicente Milanés, Joshué Pérez.

PhD in progress: Farouk Ghallabi, "Environment modeling and simultaneous localization of a mobile vehicle on motorways: a multi-sensor approach", Mines ParisTech, October 2016, supervisor: Fawzi Nashashibi.

PhD in progress: Maximilian Jaritz, "Perception multi-capteur pour la conduite autonome grâce à l'apprentissage profond", Mines ParisTech, January 2017, supervisor: Fawzi Nashashibi, co-supervisor: Raoul de Charette.

PhD in progress: Francisco Navas, "Plug&Play control for highly non-linear systems: Stability analysis of autonomous vehicles", Mines ParisTech, October 2015, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés.

PhD in progress: Dinh-Van Nguyen, "Wireless sensor networks for indoor mapping and accurate localization for low speed navigation in smart cities", Mines ParisTech, December 2015, supervisor: Fawzi Nashashibi, co-supervisor: Eric Castelli.

PhD in progress: Danut-Ovidiu Pop, "Deep learning techniques for intelligent vehicles", INSA Rouen, May 2016, supervisor: Abdelaziz Bensrhair, co-supervisor: Fawzi Nashashibi.

Starting PhD: Imane Matout, "Estimation de l'intention des véhicules pour la prise de décision et le contrôle sans faille en navigation autonome", Mines ParisTech, October 2017, supervisor: Fawzi Nashashibi, co-supervisor: Vicente Milanés.

Starting PhD: Kaouther Messaoud, "Détermination des manoeuvres et des intentions des véhicules avoisinant un véhicule autonome", UPMC Paris, October 2017, supervisor: Anne Verroust-Blondet, co-supervisor: Fawzi Nashashibi, Itheri Yahiaoui.

Starting PhD: Luis Roldao Jimenez, "Modélisation 3D de l'environnement et de la manoeuvrabilité d'un véhicule", UPMC Paris, October 2017, supervisor: Anne Verroust-Blondet, co-supervisor: Raoul de Charette.

9.2.3. Juries

Guy Fayolle was a jury member of PhD thesis of Younes Bouchaala - *Handling Safety Messages in Vehicular Ad-Hoc Networks (VANETs)*, University of Versailles Saint-Quentin-en-Yvelines, 21 October 2017.

Fawzi Nashashibi was a reviewer of the PhD thesis of Ange Nizard - *Planification et commande pour véhicules à deux trains directeurs en milieu encombré* Université Blaise Pascal, Clermont-Ferrand, 31 March 2017.

Fawzi Nashashibi was an examiner of the PhD thesis of Bastien Béchadargue - *Mesure de distance et transmission de données intervéhicules par phares à LED*. University of Paris-Saclay, prepared at the University of Versailles Saint-Quentin, 10 November 2017.

Fawzi Nashashibi was the Jury President for the thesis of Viet-Cuong Ta - *Smartphone-based indoor positioning using WIFI, inertial sensor and Bluetooth*, under the co-supervision of Université Grenoble Alpes and Hanoi University of Science & Technology, 15 December 2017.

Anne Verroust-Blondet was a reviewer of the PhD thesis of Mathias Paget - *Optimisation discrète et indices de stabilité appliqués à la stéréoscopie en contexte routier*, Université Paris-Est, 13 December 2017.

9.3. Popularization

RITS team: press article on the research axes of Inria RITS team entitled "RITS Team at Inria", with participation of Fawzi Nashashibi, Anne Verroust-Blondet, Jean-Marc Lasgouttes and Raoul de Charette. IEEE Intelligent Transportation Systems Magazine, Vol 9, Issue 2. April 19th. (<http://ieeexplore.ieee.org/document/7904770/>).

Raoul de Charette: participation to the Hackathon round-table in collaboration with approximately 10 journalists and a handful of Inria researchers. Exchange on the implementation of future autonomous transportation in cities. It lead to several press article. June 7th, Paris.

Raoul de Charette: public conference "Voiture Autonomes: Où en est-on ?" at Futur en Seine, Paris, June 8th.

Raoul de Charette: exchange on upcoming challenges for autonomous driving for the web article "Véhicules Autonomes : Où En Est-On en France ?", journalist Mathilde Ragot. T.O.M. June 14th. (<http://www.tom.travel/2017/06/14/vehicules-autonomes-ou-en-est-on-en-france/>).

Raoul de Charette: exchange on upcoming challenges for autonomous driving for the web article "Véhicules autonomes : où en est-on réellement ?", journalist Benoit Fleuret. Microsoft RSLN. June 22th. (<https://rslnmag.fr/cite/vehicules-autonomes-ou-en-est-on-reellement/>).

Raoul de Charette: interview on current progress of autonomous driving and real upcoming challenges for the web article "Pourquoi la voiture 100 % autonome n'est pas près de rouler", journalist Reynald Fléchaux. Silicon. June 26th. (https://www.silicon.fr/voiture-autonome-pas-prete-rouler-178787.html?inf_by=5a0c4d80681db858068b471e).

Raoul de Charette: interview on the progress of computer vision and danger of artificial intelligence for the press article "Robots tueurs soudés pour déssouder", journalist Erwan Cario. Libération. August 24th. (http://www.liberation.fr/futurs/2017/08/24/robots-tueurs-soudes-pour-dessouder_1591778).

Gérard Le Lann: Interview published in *Journal of Internet Histories*, vol. 1, issue 1-2, pp. 188-196, (<http://tandfonline.com/doi/full/10.1080/24701475.2017.1301132>).

Gérard Le Lann: interview for Inria's 50 years "Networks, distributed algorithms and critical cyber-physical systems", (<https://50ans.inria.fr/en/gerard-le-lann-networks-distributed-algorithms-and-critical-cyber-physical-systems/>).

Fawzi Nashashibi: participation to the round-table on "L'Intelligence Artificielle pour le transport autonome" during the workshop "Journée de l'IA / Evenement Public #FranceIA" organized by SystemX at Nano-INNOV (Palaiseau), March 3rd.

Fawzi Nashashibi: participation to the round-table on "Transports et mobilité" during the workshop "Les Mystères du XXIème siècle" (<http://www.mysteres21.org/edition-2017/>), November 25th.

Fawzi Nashashibi: participation to the round-table on "les questions éthiques et juridiques en robotique" during the workshop on "Éthique de la recherche en numérique", organized by the CERNA, Paris (Institut Mines-Télécom), June 15th.

Fawzi Nashashibi: interview for "L'Esprit Sorcier" number 29 on "La voiture autonome", journalist: Melvin Martineau (<https://www.lespritsorcier.org/dossier-semaine/la-voiture-autonome/>).

Fawzi Nashashibi: interviewed by Tiffany Blandin for the book *Un Monde sans travail ?*, Paris: Seuil, 24 August 2017, (Chapter 7: la recherche sur les voitures autonomes).

Fawzi Nashashibi: interviewed by Coralie Baumard for the article "L'Intelligence Artificielle, Nouveau Moteur De l'Industrie Automobile", FORBES France, February 11th. (<https://www.forbes.fr/business/lintelligence-artificielle-nouveau-moteur-de-lindustrie-automobile/>).

Fawzi Nashashibi: interviewed by Jérôme Bonaldi (Science & Vie TV) for "Le Mag de la Science" on September 2017 (to be broadcasted in 2018).

Valda Team

8. Dissemination

8.1. Promoting Scientific Activities

8.1.1. Scientific Events Organisation

8.1.1.1. Member of the Organizing Committees

- Serge Abiteboul, organization of Personal Analytics & Privacy workshop, joint with ECML-PKDD 2017, Skopje, Macedonia
- Serge Abiteboul, scientific organization of colloquium on *La communauté scientifique face au renseignement*, École militaire, Paris, France
- Serge Abiteboul, organization of colloquium on *Les enjeux scientifiques de l'éthique du numérique*, Académie des sciences
- Pierre Senellart, organization of ParisBD 2017, Télécom ParisTech, Paris, France
- Pierre Senellart, co-organizer of ACM-ICPC Southwestern Europe 2017 competition

8.1.2. Scientific Events Selection

8.1.2.1. Chair of Conference Program Committees

- Pierre Senellart, BDA 2017 (French conference on data management)
- Pierre Senellart, WebDB workshop, joint with SIGMOD 2017

8.1.2.2. Member of the Conference Program Committees

- Pierre Senellart, *Gems of PODS 2017* committee
- Pierre Senellart, SIGMOD 2017 (*distinguished PC member*), ICDT 2017, EDBT 2018

8.1.3. Journal

8.1.3.1. Reviewer - Reviewing Activities

- Pierre Senellart, *Journal of the ACM*, *VLDB Journal*, *Artificial Intelligence*

8.1.4. Invited Talks

- Serge Abiteboul, keynote at PPDP-LOPSTR, Namur, Belgium
- Serge Abiteboul, keynote at ETAPS, Uppsala, Sweden
- Serge Abiteboul, keynote at Law & Big Data Conference, Paris, France

8.1.5. Leadership within the Scientific Community

Serge Abiteboul is a member of the French Academy of Sciences, of the Academia Europa, and of the scientific council of the Société Informatique de France.

8.1.6. Scientific Expertise

- Pierre Senellart, ANR, NSF

8.1.7. Research Administration

- Serge Abiteboul was the president of the Dune jury (*Développement d'universités numériques expérimentales*)
- Serge Abiteboul participated in the NCU jury (*nouveaux cursus à l'université*)
- Serge Abiteboul contributed to the report on *Éthique de la recherche en apprentissage machine* of Cerna-Allistene
- Serge Abiteboul is co-chair of the “Committee on Gender Equality and Equal Opportunities” of Inria.
- Luc Segoufin is a member of the CNHSCT of Inria.
- Pierre Senellart is a member of the board of section 6 of the National Committee for Scientific Research.
- Pierre Senellart is vice-director of the DI ENS laboratory, joint between ENS, CNRS, and Inria.

8.2. Teaching - Supervision - Juries

8.2.1. Teaching

Licence: Pierre Senellart, *Databases*, 54 heqTD, L3, École normale supérieure

Licence: Pierre Senellart, *Algorithms*, 18 heqTD, L3, École normale supérieure

Master: Serge Abiteboul & Pierre Senellart, *Web data management*, 36 heqTD, M2, MPRI

Master: Luc Segoufin, *Logic, descriptive complexity and database theory*, 36 heqTD, M2, MPRI

Pierre Senellart has various teaching responsibilities (L3 internships, M2 internships, M2 administration) at ENS.

Serge Abiteboul proposed with Benjamin Nguyen and Philippe Rigaux a second session of the Mooc “Bases de données relationnelles: comprendre pour maîtriser” (FUN). He proposed with Julia Stoyanovich a course on “Ethical data management” at the EDBT Summer School, Genova, 2017.

8.2.2. Supervision

PhD : David Montoya, *Une base de connaissance personnelle intégrant les données d'un utilisateur et une chronologie de ses activités*, Université Paris-Saclay, 6 March 2017, Serge Abiteboul & Pierre Senellart

PhD in progress: Debabrota Basu, *Reinforcement learning applications to data management problems*, started in 2015, Stéphane Bressan & Pierre Senellart

PhD in progress: Julien Grange, *Graph properties: order and arithmetic in predicate logics*, started in 2017, Luc Segoufin

PhD in progress: Miyoung Han, *Learning approaches to dynamic data management*, started in 2015, Pierre Senellart

PhD in progress: Quentin Lobbé, *Diachronic analysis of diaspora communities through web archives enrichment*, started in 2015, Pierre Senellart & Dana Diminescu

PhD in progress: Mikaël Monet, *Efficient querying of large uncertain graphs by exploiting their structure*, started in 2015, Pierre Senellart & Antoine Amarilli

PhD in progress: Karima Rafes, *Security and management of personal data in the Web of things*, started in 2015, Serge Abiteboul & Sarah Cohen-Boulakia

PhD in progress: Alexandre Vigny, *Query enumeration on nowhere-dense graphs*, started in 2015, Luc Segoufin & Arnaud Durand

8.2.3. *Juries*

- PhD Paul Lagrée, October 2017, Université Paris-Saclay, Pierre Senellart

8.3. Popularization

Serge Abiteboul is involved in several popular science activities. He founded and animates the blog <http://binaire.blog.lemonde.fr/> on computer science. He was the scientific curator (*commissaire scientifique*) of the exhibition “Terra Data” at the Cité des Sciences. He published two scientific popularization books in 2017, “Le temps des algorithmes” [26], with Gilles Dowek, and “Terra data” [27], with Valérie Peugeot.

Serge Abiteboul is the president of the strategic committee of the Blaise Pascal foundation for scientific mediation.

WILLOW Project-Team

10. Dissemination

10.1. Promoting Scientific Activities

10.1.1. Scientific Events Organisation

10.1.1.1. General Chair, Scientific Chair

- I. Laptev will be program co-chair of IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018.

10.1.1.2. Member of the Organizing Committees

- M. Trager is an organizer of “Minisymposium” on “Algebraic Vision” at the SIAM conference on Applied Algebraic Geometry (Atlanta, July 31 – August 4, 2017).
- G. Varol is an organizer of “Women in Computer Vision Workshop” at IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017.
- G. Varol is an organizer of “Multiview Relationships in 3D Data Workshop” at International Conference on Computer Vision (ICCV), 2017.

10.1.2. Scientific Events Selection

10.1.2.1. Area chairs

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018 (J. Sivic).
- International Conference on Computer Vision (ICCV), 2017 (J. Sivic).
- European Conference on Computer Vision (ECCV), 2018 (I. Laptev, J. Sivic).

10.1.2.2. Member of the Conference Program Committees

- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017 (G. Cheron, I. Laptev, A. Osokin, J. Sivic).
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2018 (J.-B. Alayrac, M. Oquab, R. Rezende, I. Rocco, G. Varol).
- International Conference on Computer Vision (ICCV), 2017 (I. Laptev, A. Osokin).
- Neural Information Processing Systems (NIPS), 2017 (A. Osokin, J. Sivic).
- International Conference on Learning Representations (ICLR), 2017 (J. Sivic).
- International Conference on Machine Learning (ICML), 2017 (A. Osokin).
- IEEE International Conference on Robotics and Automation (ICRA), 2018 (A. Miech).

10.1.3. Journals

10.1.3.1. Member of the editorial board

- International Journal of Computer Vision (I. Laptev, J. Ponce, J. Sivic).
- IEEE Transactions on Pattern Analysis and Machine Intelligence (I. Laptev, J. Sivic).
- Foundations and Trends in Computer Graphics and Vision (J. Ponce).
- I. Laptev co-edit a special issue on “Deep Learning for Computer Vision” in Computer Vision and Image Understanding.

10.1.3.2. Reviewer

- International Journal of Computer Vision (G. Cheron, M. Trager, G. Varol).

- IEEE Transactions on Pattern Analysis and Machine Intelligence (J.-B. Alayrac, G. Cheron, A. Osokin, M. Trager, G. Varol).
- IEEE Transactions on Circuits and Systems for Video Technology (G. Varol).

10.1.4. Others

- J. Sivic is senior fellow of the Neural Computation and Adaptive Perception program of the Canadian Institute of Advanced Research.
- A. Bursuc obtained the outstanding reviewer award at International Conference on Computer Vision (ICCV), 2017.

10.1.5. Invited Talks

- I. Laptev, Seminar, Inria Rennes, December, 2017.
- I. Laptev, Invited talk, Chalearn Workshop on Action, Gesture, and Emotion Recognition, Venice, October, 2017.
- I. Laptev, Invited talk, The Joint Video and Language Understanding Workshop, Venice, October, 2017.
- I. Laptev, Invited talk, Rentrée ENS, Paris, September, 2017
- I. Laptev, Invited talk, ML Day, Pré-GDR IA, Paris, September 2017.
- I. Laptev, Invited talk, Frontiers of Video Technology workshop, Adobe, July, 2017.
- I. Laptev, Invited talk, Workshop on YouTube-8M Large-Scale Video Understanding, Honolulu, July, 2017.
- I. Laptev, Invited talk, Workshop on Visual Understanding Across Modalities, Honolulu, July, 2017.
- I. Laptev, Plenary talk, Iberian Conference on Pattern Recognition and Image Analysis, Faro, June, 2017.
- I. Laptev, Invited talk, Paris ML Meetup Spatio-temporal Series Hackathon, Paris, February, 2017.
- A. Miech, Invited Talk, Facebook AI Research, Paris, September 2017.
- A. Miech, Invited Talk, DGA TIM2017 Seminar, Paris, July 2017.
- A. Miech, Invited Talk, Paris ML Meetup, Paris, June 2017.
- J. Ponce, Keynote speaker, Korean Conference on Computer Vision, Seoul, June 2017.
- J. Ponce, Invited talk, BioVision, Lyon, April 2017.
- J. Ponce, Invited talk, Dept. of computer science of the University of Central Florida, Orlando, February 2017.
- J. Ponce, Invited talk, New York University, Center for Data Science, September 2017.
- J. Ponce, Invited talk, Facebook AI Research, New York, October 2017.
- J. Ponce, Invited talk, Amazon, Seattle, November 2017.
- J. Ponce, Invited talk, AEF conference, Paris, 2017.
- J. Ponce, Invited talk, BIOVISION, The World Life Sciences Forum, Lyon, April 2017.
- J. Ponce, Invited talk, DGSi, 2017.
- J. Ponce, Invited talk, DRM 20th Anniversary, 2017.
- J. Sivic, Seminar, KTH Stockholm, January, 2017.
- J. Sivic, Invited talk, ParisTech Telecom, January, 2017.
- J. Sivic, Invited talk, University of Amsterdam, March, 2017.
- J. Sivic, Invited talk, ORASIS, journées francophones des jeunes chercheurs en vision par ordinateur, June, 2017.
- J. Sivic, Invited talk, Visual Understanding for Interaction workshop, CVPR 2017, July, 2017.

- J. Sivic, Invited talk, Frontiers of Video Technology workshop, Adobe, July, 2017.
- J. Sivic, Invited talk, Inria Rennes, September, 2017.
- J. Sivic, Seminar, UC Berkeley, December, 2017.
- J. Sivic, Invited talk, the CIFAR workshop, Long Beach, December 2017.

10.1.6. Leadership within the Scientific Community

- Member of the advisory board for the IBM Watson AI Xprize (J. Ponce).
- Member of the steering committee of France AI (J. Ponce).
- Member, advisory board, Computer Vision Foundation (J. Sivic).

10.1.7. Scientific Expertise

- J. Sivic gave an overview of state-of-the-art in computer vision at the seminar on deep learning at Academie des Technologies, Paris, November 2017.

10.1.8. Research Administration

- Member, Bureau du comité des projets, Inria, Paris (J. Ponce)
- Director, Department of Computer Science, Ecole normale supérieure (J. Ponce)
- Member, Scientific academic council, PSL Research University (J. Ponce)
- Member, Research representative committee, PSL Research University (J. Ponce).
- Member of Inria Commission de developpement technologique (CDT), 2012- (J. Sivic).
- Member of the Hiring Committe for the tenure track position at CentraleSupélec (I. Laptev).
- Member of the Hiring Committee for Professor of Computer Vision at CentraleSupélec (I. Laptev).

10.2. Teaching - Supervision - Juries

10.2.1. Teaching

- Master : M. Aubry, K. Alahari, I. Laptev and J. Sivic "Introduction to computer vision", M1, Ecole normale superieure, 36h.
- Master : I. Laptev, J. Ponce and J. Sivic (together with C. Schmid, Inria Grenoble), "Object recognition and computer vision", M2, Ecole normale superieure, and MVA, Ecole normale superieure de Cachan, 36h.
- Master : I. Laptev and J. Sivic, Cours PSL-ITI - Informatique, mathematiques appliques pour le traitement du signal et l'imagerie, 20h.

10.2.2. Supervision

PhD in progress : Thomas Eboli, started in Oct 2017, J. Ponce.

PhD in progress : Zongmian Li, "Learning to manipulate objects from instructional videos", started in Oct 2017, I. Laptev, J. Sivic and N. Mansard (LAAS/CNRS, Toulouse).

PhD in progress : Yana Hasson, started in Nov 2017, I. Laptev and C. Schmid.

PhD in progress : Dmitry Zhukov, "Learning from instruction videos for personal assistants", started in Oct 2017, I. Laptev and J. Sivic.

PhD in progress : Ignacio Rocco, "Estimating correspondence between images via convolutional neural networks", started in Jan 2017, J. Sivic, R. Arandjelovic (Google DeepMind).

PhD in progress : Antoine Miech, "Understanding long-term temporal structure of videos", started in Oct 2016, I. Laptev, J. Sivic, P. Bojanowski (Facebook AI Research).

PhD in progress : Gul Varol, "Deep learning methods for video interpretation", started in Oct 2015, I. Laptev, C. Schmid.

PhD in progress : Julia Peyre, “Learning to reason about scenes from images and language”, started in Oct 2015, C. Schmid, I. Laptev, J. Sivic.

PhD in progress : Jean-Baptiste Alayrac, “Structured learning from video and natural language”, started in 2014, I. Laptev, J. Sivic and S. Lacoste-Julien (Inria SIERRA / U. Montreal).

PhD : Rafael Sampaio de Rezende, “New methods for image classification, image retrieval and semantic correspondence”, graduated in 2017, J. Ponce.

PhD in progress : Guilhem Cheron, “Structured modeling and recognition of human actions in video”, started in 2014, I. Laptev and C. Schmid.

PhD in progress : Theophile Dalens, “Learning to analyze and reconstruct architectural scenes”, starting in Jan 2015, M. Aubry and J. Sivic.

PhD in progress : Vadim Kantorov, “Large-scale video mining and recognition”, started in 2012, I. Laptev.

PhD in progress : Maxime Oquab, “Learning to annotate dynamic scenes with convolutional neural networks”, started in Jan 2014, L. Bottou (Facebook AI Research), I. Laptev and J. Sivic.

PhD in progress : Matthew Trager, “Projective geometric models in vision”, started in 2014, J. Ponce and M. Hebert (CMU).

PhD in progress : Tuang Hung VU, “Learning functional description of dynamic scenes”, started in 2013, I. Laptev.

10.2.3. *Juries*

PhD thesis committee:

- Ahmet Iscen, University of Rennes, France, 2017, (J. Sivic, rapporteur).
- Edouard Oyallon, ENS, France, 2017, (I. Laptev, examinateur).
- Juan Manuel PÉREZ RÚA, Inria Rennes, France, 2017, (I. Laptev, examinateur).
- Ali Razavian, KTH Stockholm, Sweden, 2017 (J. Sivic, reviewer).
- Francisco Suzano Massa, ENPC, France, 2017, (J. Sivic, examinateur).
- Mattis Paulin, Université de Grenoble, France, 2017 (J. Sivic, rapporteur).

10.3. Popularization

- Interview with Science et Vie, June 2017 (J. Ponce).
- Interview with Forbes Russia, June 2017 (J. Ponce).
- Interview "Science et Vie Junior", July 2017 (J. Ponce).
- Interview for "Le jaune et le rouge", Oct. 2017 (J. Ponce).
- Interview for the "les 100 français de l'IA" dossier of Usine Nouvelle, Dec. 2017 (J. Ponce).
- Two articles in "Binaires" for the newspaper Le Monde (J. Ponce).