Curriculum Vitæ

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Fabien Campillo
Date of birth: November 27, 1959
French citizen

Senior Researcher
Directeur de Recherche DR2
Inria

Contact details

Professional

Project-Team [MathNeuro](#)
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[[Clickable links are in NavyBlue]](#)

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Education

2010 *Qualified for full professor position* by the "French National University Council" (Conseil national des universités, CNU), 26th section "Applied Mathematics and Applications of Mathematics".

2004 French habilitation qualification, *Habilitation à diriger des recherches*, from University of Rennes 1. *Quelques applications des processus de diffusion: filtrage/statistique, contrôle, homogénéisation.* [PDF]

1984 Ph.D., University of Provence. *Filtrage et détection de ruptures de processus partiellement observés.* Advisor: Étienne Pardoux. [PDF]

1983 *Master's degree* in Applied Mathematics and Mathematics, University of Provence, Marseille. Master thesis: *La méthode d'approximation de Gauss-Galerkin – Application à l'équation du filtrage non-linéaire.* Advisor: Étienne Pardoux. [PDF]

Professional Experience

Senior researcher ("Directeur de recherche", DR2) Inria since 2010,
Researcher ("Chargé de recherche", CR1) Inria from 1987 to 2010.

From 2016 – Vice Head of the team MathNeuro (Inria Méditerranée).

2015 – Member of the team Lemon (Inria Méditerranée).

2013–2014 – Vice-head of the team Modemic (Inria Méditerranée and Inra MIA).

2010–2013 – Vice-head of the team Mere (Inria Méditerranée and Inra MIA).

2007–2009 – Member of the team Mere (Inria Méditerranée and Inra MIA).

2002–2007 – Member of the team Aspi (Inria Rennes).

1996–2002 – Head of the team Sysdys (Inria Sophia-Antipolis) located in Marseille.

1987–1995 – Member of the team Méfisto (Inria Sophia-Antipolis).

1986 – Post-doctoral position in the team Méfisto (Inria Sophia-Antipolis).

end of 1985 – Post-doctoral position in the University of British Columbia in Vancouver, Mathematics department.

1985 – Military service as researcher in DCAN Toulon (Direction Construction Armes Navale) in underwater tracking department.

1983–1984 – Graduate research position (allocataire de recherche) in the Applied Mathematics department of the University of Provence and in the Laboratory of Mechanics and Acoustics (CNRS Marseille).

Research grants and contracts

National projects (PI and co-PI)

2023-2025 – Principal investigator (PI) of the Inria Exploratory Action "Multiscale Modeling of Dravet Syndrome" (2MDS); $\sim$ 4K€/y + post-doc position [site].

2013-2015 – Principal investigator (PI) of "Numerical models for microbial ecosystems" project (MnMs) of the French national network for complex systems RNSC; 2K€/y [site].

2009-2011 – Co-principal investigator (co-PI) of the project "Using mathematical modeling to improve ecological services of prairie ecosystems" (Modecol) for the ANR program "Systèmes complexes et modélisation mathématique" (Syscomm); 320 K€.

2007-2008 – Principal investigator (PI) of the Inria Collaborative research initiative "Micr" (stochastic modeling, numerical inference and control for renewable resources assessment and management); 43K€ and 12 months post-doctoral position.

1998 – Co-principal investigator (co-PI) for Inria for the project "Diffusion in random media" of the CNRS program "Modeling and numerical simulation".

National projects (member)

2010-2013 – Member of the project "Multi-scale modelling biodiversity structure coupling in biofilms" (Disco) for the ANR program "Systèmes Complexes et Modélisation mathématique" (Syscomm); 500K€ with 111K€ managed by Inria.

2009-2010 – Member of the Inria Collaborative research initiatives "Vitelbio" (virtual teluric bioreactor) dedicated to the computational modeling of soil microbial communities (in collaboration with UMR Eco&Sol and ITK company); 56 K€.

2009-2010 – Member of the project "Modeling of dynamical microbial and enzymatical dynamic systems in structured environments" common to Inra and Inria, comprising the team MERE and teams of Inra, Cirad and SupAgro-Montpellier. This action aims at creating a network of exchanges between ecologists/microbiologists, physical chemists, modellers and soil scientists on ways to combine biology and physical chemistry. It also aims to develop a model software of "spatialized digital bioreactor"; 100 K€.

Also member of: • **2008** CNRS Multidisciplinary thematic network "mathematics and decision for sustainable development" • **2006** "Data assimilation for air quality", Inria Collaborative research initiative • **2003-2004** specific action "particle methods" CNRS-STIC of the Pluridisciplinary Thematic Network "Mathematics for Information and Systems" • **1988-1989** RCP CNRS "Random mechanics" • **1988-1990** Greco CNRS "Signal Processing and Image", "Recognition and Rupture" and "Discrete Models and Learning" groups • **1988-1990** "NonLinear Pole" du Greco CNRS Automatic Control, "Deterministic and Stochastic Observers" group.

European networks and projects (member)

• **2017–2023** Member of the European *Human Brain Project*" • **2003–2004** "Distributed control and stochastic analysis of HYBRId systEms supporting safety critical real-time systems desiGn" (Hybridge), programme FP5-IST ‰ https://cordis.europa.eu/project/id/IST-2001-32460 • **2003** IHP program "Statistical methods for dynamical stochastic systems" • **1995, 1998, 2003** ERNSI (European Research Network System Identification), TMR Project "System Identification" • **1994–1995** HCM Network "Statistical Inference for Stochastic Processes" • **1994** Science European Network "Stochastic PDE and Random Fields" • **1988–1989** European Action "Effective Stochastics".

International projects (PI and co-PI)

2014–2015 – Co-principal investigator (co-PI) of the project "Information and Communication Sciences and Technologies - Madagascar" (Stic-Mada) of the International Laboratory for Research in Computer Science and Applied Mathematics (LIRIMA), 31K€€. In partnership with the University of Fianarantsoa, the University of Antananarivo, Inria, and IRD.

2014–2015 – Co-principal investigator (co-PI) of the project "Numerics for water treatment research" (NuWat) of the International Laboratory for Research in Computer Science and Applied Mathematics (LIRIMA), 10K€ [site].

2010–2011 – PI for STIC-South America scientific-technological cooperation program on "Modelamiento Matematico por Manejo de Recursos Naturales" with teams from Chile, Argentina and Peru, 30K€ for the first year, 12K€ managed by Inria.

1999–2001 – Co-PI for Inria for the project "Random media and Homogenization" of the PICS CNRS program (International Programmes of Scientific Cooperation). Program between Inria, the LATP (Marseille), the Lebedev Physical Institute and the Institute for Information Transmission Problems IITP) of the Russian Academy of Sciences.

International projects (member)

2019–2022 – Member of NeuroTransSF (NeuroTransmitter cycle: A Slow-Fast modeling approach), joint team between MathNeuro and the Basque Center for Applied Mathematics (BCAM, Bilbao, Spain), 25K€ [site].

Also member of: • **1996** Cooperation with the Institute for Information Transmission Problems (IPP), CNRS–Russian Academy of Sciences agreement. • **1995–1996** research action "Nonlinear Filtering : Stochastic Analysis and Numerical Methods" of the US Army Research Office • **1988** "Nonlinear filtering" project for the USACCE (United States Army Contracting Command, Europe).

—————————————————————— **Industrial grants and contracts**

I have participated and led many research contracts with various industrial companies, including:

2005–2006 – France–Telecom, Location and tracking of mobile devices by particle filtering.

1995–1996 – IFP (Institut Français du Pétrole), Monte Carlo methods for reservoir engineering: simulation methods to identify the effective characteristics of reservoirs.

1991–1992 – DCAN–CERDSM (Centre d'Etude et de Recherche de Détection Sous-Marine) in Toulon, Nonlinear filtering for bearings-only target motion analysis.

1992–1993 – Ifremer (French institute for exploitation of the sea), Nonlinear filtering for positioning and tracking of underwater devices.

1987–1991 – Renault, Stochastic optimal control for the development of optimal control laws for semi-active suspension systems.

I have led and participated in the development of the following software:

2016 [in collaboration with Coralie Fritsch] `modelsOfChemostat` This software simulate four chemostat models: the growth-fragmentation-death chemostat IBM; the growth-fragmentation-death chemostat PDE model; the Crump-Young model; the classical ODE model [`Python`: Conception], github.

2008 [in collaboration with N. Desassis and A. Dkhissi] `forsims` (simulation tools for forestry) In the context of the Inria Collaborative research initiatives MICR, two software tools (one in `matlab`, the other in `java`) have been developed for Monte Carlo simulation of (simple) spatiotemporal plant population. [`matlab`: Conception/realization, `java`: Conception]

2003–2004 SMC demos: set of demonstration `matlab` procedures for nonlinear filtering approximation via particle filtering (sequential Monte Carlo). Freely distributed. [conception/realization] site, gitlab (*)

1997 [in collaboration with Frédérique Cérou] Conception of a set of `java` applets aiming at illustrating some basic theorems of probability theory and some stochastic algorithms (random variables, stochastic processes, traveling salesman problem). [conception] (*)

1996 [in collaboration avec Frédérique Cérou] A 2D random field generator in `C` with TK-TCL graphical user interface. [conception]

1995 [in collaboration with François Le Gland] `fortran` software for bearings-only target motion analysis using particle approximation. Deposited software with the "Agence pour la Protection des Programmes" (APP) and made available to the DCN-Ingénierie (DCN/Toulon). [conception/realization]

1991–1992 [in collaboration with François Le Gland] ZPB (Zakai program builder) Automatic generation of `fortran` programs for nonlinear filtering (first with `macsyma`, then with `maple`). [conception/realization]

1985 `fortran` software for bearings-only target motion analysis using extended Kalman filtering techniques. CERDSM, DCN-Toulon. [conception/realization]

(*) See menu "Software" in my website.

I have given courses at various French universities: in Master 2, DEA, DESS (5th year post-graduate masters program); in Master 1 and Maitrise (4th year post-graduate masters program); in License (3rd year post-graduate masters program). I have given courses at various Engineering schools ("grande école" or "école supérieure", 2nd and 3rd years after the 2 years of preparatory classes). In detail:

2017–2019 – Modeling and numerical control of dynamic systems in agronomy (in French). Institut Agro Montpellier, Training in Data Science for Agronomy, 10h [gitlab].

2012–2016 – Stochastic processes in continuous time for modeling in ecology (in French) [LN16]. University of Montpellier, Master 2, 21h.

2009 – Mathematics for renewable resources management (in French). Montpellier SupAgro (International Center for Higher Education in Agricultural Sciences), 2nd year, 15h.

2007/08, 2008/09 – MCMC methods (in French). Master 2 of Biostatistic – University of Montpellier 2, 4h.

2004/05, 2005/06, 2006/07, 2007/08 – Hidden Markov models and particle filtering (in French) [LN11]. Master 2 – University of the South, Toulon-Var. 24h.

2001/02 – Markov chains and hidden Markov chains for the genomics: an introduction (in French). DEA for computer sciences – École doctorale de mathématiques et informatique de Marseille, 25h.

2001/02 – Markov models for the genomics: an introduction (in French). Superior School of Mechanics of Marseille (École Supérieure de Mécanique de Marseille), modeling department, 12h.

1998/99 – Stochastic processes and simulation (in French). Directed work and practical work (TD/TP). Superior School of Mechanics of Marseille (École Supérieure de Mécanique de Marseille), 12h.

1995/96 and 1998/97 – Introduction to nonlinear filtering (in French). DESS of Mathematical Engineering – Doctoral school (École Doctorale) of mathematics and computer science of Marseille. 25h.

1996/97 – Discrete time filtering (in French). DEA of Applied Mathematics – Doctoral school (École Doctorale) of mathematics and computer science of Marseille. 30h.

1995/96 – Diffusion processes with applications to homogenization (in French). DEA of Applied Mathematics – Doctoral school (École Doctorale) of mathematics and computer science of Marseille. 30h.

1994/95 – Diffusion process with applications to finance (in French). DEA of Applied Mathematics – Doctoral school (École Doctorale) of mathematics and computer science of Marseille. 30h.

1992/93 – Discrete optimization with simulated annealing and Boltzman machines (in French). DESS of Mathematical Engineering – University of Provence. 25h.

1991/92 – Makovian models and applications (in French). DESS of Mathematical Engineering – University of Provence. 12h.

1992/93 – Somes complements in `unix`*,* `C` *and* `maple` (in French). DESS of Mathematical Engineering – University of Provence. 10h.

1992/93 – Introduction to parallel computing (in French). DEA of Applied Mathematics – University of Provence. 10h.

1989/90 to 1993/94 – Introduction to optimal filtering (in French). Troisième année de l'École Supérieure des Sciences de l'Informatique (Essi) – University of Nice Sophia Antipolis. 30h.

1986/87 and 1987/88 – Introduction to statistics (in French). Troisième année de l'École Supérieure des Sciences de l'Informatique (Essi) – University of Nice Sophia Antipolis. 30h.

Other teaching activities

2019 – Introduction to (Piecewise Deterministic) Markov Processes and Applications to Neuroscience. June 10-14, 2019, BCAM Bilbao.

2016 – Links between discrete/random and continuous/deterministic models in population dynamics, CIMPA Research School, "Mathematics for Biology", October 11-14, 2016, Hammamet, Tunisia.

2008 – Course on "Markovian and Bayesian approaches for agro-ecological dynamics" (in French) – Cimpa–Unesco–Madagascar School on "Computer sciences and mathematics for landscape modeling" (Mimopa) – September 15-30, 2008, University of Fianarantsoa (National School for Computer), Madagascar.

2007 – Workshop on "Probability, statistics, Scilab – Some applications in environment" (in French). University of Fianarantsoa, May 21-25, 2007, 30h [organization and lectures].

2004 – Particle filtering: introduction and application to mobile tracking in cellular network (in French). School for researchers in signal processing – October 18-20, 2004, Rennes.

2003 – Introduction to particle filtering (in French). Training program in the CNES (Centre National d'Études Spatiales), Toulouse, November 24, 2003.

2003 – Particle filtering: "Some examples by hands and by `matlab`*"* (in French). Formation SAGEM, Argenteuil, June 12-13, July 3-4, September 19, 2003 [PDF]

1993 and 1994 – Scientific applications of the Connection Machine (in French). CNRS Luminy, Marseille.

1994 – Parallel computing (in French). CEA (French Atomic Energy Commission) Cadarache.

Students supervision

Ph.D. students: I have participated in the supervision of a number of doctoral students. I specifically supervised the following thesis:

Samuel Nyobe – Co–advisor with Vivien Rossi (Cirad – Ummisco, University Yaoundé I). The thesis is prepared at the University of Yaoundé.

Coralie Fritsch – Thesis defended in 2014. Subject: "Individual based model for the chemostat," University of Montpellier 2. Now researcher at Inria Nancy.

Angelo Raherinirina – Thesis defended in 2013. Subject: "Markovian modeling for agroecology," University of Fianarantsoa (Madagascar), co-advisor with Rivo Rakotozafy. Since 2013, assistant professor University of Fianarantsoa (Madagascar).

Lorie Dudoignon – Co–advisor with Jean–Loup Risler ("Génome et informatique" Laboratory, Évry). Unfinished thesis due to the student's decision to be enrolled at Médiamétrie Company.

Élisabeth Remy – Thesis defended in 1999. Subject: "Homogenization of difference operators: analytic and probabilistic approaches." University of Provence. Since 2002, Élisabeth Remy is a researcher in the CNRS at the Luminy Institute of Mathematics (IML), Marseille.

Abdoulaye Traoré – Co–advisor with Étienne Pardoux, unfinished thesis due to student's decision to enter a business school.

Recent participations in the supervision of theses:

Mohsen Chebbi (Lamsin Tunis, University of Tunis, Tunisia). Thesis defended January 19, 2019. Subject: "Modélisation stochastique pour les biotechnologies : analyse et simulation".

Oussama Hadj Abdelkader (University of Tlemcen, Algeria). Thesis defended September 25, 2019. Subject: "Méthodes stochastiques pour la modélisation et l'identification des bioprocédés de digestion anaérobie".

I have participated in the supervision of the following thesis:

Recent post-doc students:

Louisiane Lemaire – Investigating how changes at the level of individual neurons (ion channels mutation, activity-induced fluctuations in ion concentrations) affect their excitability, and the consequences on neuronal networks (supervision), as part of the 2MDS project, 2024 and 2025.

Benjamin Aymard – Mean-field limit of interacting 2D nonlinear stochastic spiking neurons (co-supervision), as part of the Human Brain Project, 2017 to 2019.

+ 5 postdoctoral students.

Other students: Advisor for more than 35 Master and Engineering school students mainly from Provence, Rennes 1, Nice Sophia-Antipolis, Montpellier 2 universities. In particular[1]:

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[1]Others: 1987, Laure Vallet. 1988, Toufic Abboud, Awa Gon, Abdeluaab Lidouh. 1989, Yann Levené, Guénhael Quéric. 1990, Rivo Rakotozafy, Mohamed Jamal Nekkachi. 1991, Jean-Noel Vétillard, Huilong Zhang. 1992 Magali Camarasa, Corinne Cariat, Nathalie Giordana, Valérie Violini 1993, Hervé Magnien, Laurent Mevel. 1994, Matio Robinson. 1995, Élisabeth Remy. 1996, Arnaud Kerjean, Alain Gallet (ingénieur expert) 1997, Driss Aitmani, Sébastien Baguet, Éric Bouchet 1998, Arnaud Martin. 1999, Alice Maurisot, Vincent Toulmonde. 2000, Lorie Dudoignon. 2001, Bruno Castor, Matthieu Vignes. 2008, Khader Khadraoui, Angelo Raherinirina. 2009, Audrey Dubourg. 2012, Amine Boutoub.

Efstathios Pavlidis, "Modeling of Neural and Cognitive Systems". Two internships from the **Master's** program "Modeling of Neural and Cognitive Systems"" at UniCA, 2020 (2 months), 2021 (6 months). Co-advised with Mathieu Desroches. These internships resulted in a publication [P28].

Antoine Brouze, "Programmation d'une interface utilisateur pour des algorithmes de simulation." DUT spécialité Informatique, University of Montpellier 2, 2010. Co-advised with Pascal Neveu (Inra) and Coralie Fritsch.

Matthieu Lauze, "C++ vs Java for the implementation of an individual-based model." DUT spécialité Informatique, University of Montpellier 2, 2010.

Damien Juery, "Quasi-stationary distribution of the stochastic logistic model." Master 1 Recherche Biostatistiques, University of Montpellier II, 2010.

Daoud Youssef, "Modélisations stochastiques de dynamique de populations à différentes échelles." Stage de Master recherche en Mathématiques, Saint-Esprit de Kaslik University, Lebanon , 2010.

Audrey Dubourd, "Individual-based Markovian models." Master MIMSE speciality reliability and statistics, University of Bordeaux 2.

Angelo Raherinirina, "Markovian modeling of agricultural dynamics". Master thesis training, Mathematics, University of Fianarantsoa, 2008.

Khader Khadraoui, "An individual-based Markovian model for forets dynamics". Master thesis training, Biostatistics, University of Montpellier 2, 2008.

Marie Denis, "Bayesian analysis of models for natural resources dynamics". Master thesis training, Biostatistics, University of Montpellier 2, 2007.

Philippe Cantet, "Monte Carlo Bayesian inference for renewable resources models". ISTIL (school of engineering of the Claude Bernard Lyon 1 University), Modeling and Scientific Computing department, final training report, 2006.

Invitations

2024 4 weeks in Bilbao (Spain), at the Basque Center for Applied Mathematics (BCAM).

2023 1 week in Bilbao (Spain), at the Basque Center for Applied Mathematics (BCAM).

2019 1 week in Bilbao (Spain), at the Basque Center for Applied Mathematics (BCAM).

2017 1 week in Bilbao (Spain), at the Basque Center for Applied Mathematics (BCAM).

2013 1 week in Tunis (Tunisia) at the Laboratory of Mathematical and Numerical Modelisation in Engineer Sciences (LAMSIN).

2013 1 week in Tlemcen (Algeria) at the Laboratoire d'Automatique de Tlemcen (LAT).

2010 1 week in Santiago (Chile) at the Center For Mathematical Modeling (CMM), Universidad de Chile.

2008 3 weeks in Antananarivo and Fianarantsoa (Madagascar) as the representative of Sarima Scientific Interest Group (GIS) for Madagascar and also for a lecture in a Cimpa-Unesco-Madagascar school.

2006 2 weeks in Antananarivo and Fianarantsoa (Madagascar) as the representative of Sarima Scientific Interest Group (GIS) for Madagascar – 1 week in Fianarantsoa as organizer/speaker for a workshop/school for probability, statistics and scilab for ecology.

2006 2 weeks in Antananarivo and Fianarantsoa (Madagascar) as the representative of Sarima Scientific Interest Group (GIS) for Madagascar.

2005 1 week in Antananarivo and Fianarantsoa (Madagascar) as the representative of Sarima Scientific Interest Group (GIS) for Madagascar.

1999 2 weeks (twice) in the Lebedev Institute of Moscow.

1998 1 month in the Lebedev Institute of Moscow.
2 weeks in Antananarivo and Fianarantsoa universities (Madagascar).

1997 1 month in the Lebedev Institute of Moscow.

1992 2 weeks in the School of Mathematics at the University of Edinburgh.

1991 2 weeks at the Systems Research Center (SRC) at the University of Maryland, College Park.

1987 2 weeks in the Division of Applied Mathematics, Brown University.

Scientific animation

Inria teams

Since 2017 Vice-head of team MathNeuro (Inria Méditerranée), headed by Mathieu Desroches.

2010–2015 Vice-head of team Mere and Modemic (Inria Méditerranée and Inra MIA), headed by Alain Rapaport.

1996–2002 Head of the Sysdys team, Inria Sophia-Antipolis located in Marseille Château–Gombert.

1994–1995 Head of team Méfisto at Inria Sophia-Antipolis, headed by Étienne Pardoux.

Representative for Inria

2011-2015 Member of the group responsible for establishing and coordinating the partnership with Labex Numev, particularly focusing on the modeling aspect.

2008–2012 I participated in the establishment of a partnership between Inria and the Thematic Network for Advanced Research (RTRA) "Agronomic Research and Sustainable Development, South and Mediterranean," in cooperation with the Agropolis Foundation.

2007–2008 Participation in the development of a partnership between Agropolis Foundation (Scientific Foundation for Agricultural Sciences and Sustainable Development) and Inria for a joint scientific program about "Computational plants and ecosystems".

1996–1997 Representative for the Director of Inria Sophia Antipolis Research Center in the Regional Delegation for Research and Technology Provence–Alpes–Côte d'Azur (DRRT-PACA).

Inria boards, committees, etc.

Since 2023 Elected member of the Inria Evaluation Committee and member of the "bureau" of this committee. During the first year I was member of the:

- jury for the Individual Bonus C3 Campaign, 8 reports (1 CR junior, 4 CR confirmés, 1 DRCE)
- jury for the Researchers Promotion Campaign, 10 reports (5 CRCH, 1 CRCH-8, 4 DR seniors)
- working groups for the creation of 2 team-projects (MUSICS, BOOST).
- working group for the evaluation of the team-project CONVECS.
- working group on the "Impact of the Use of LLMs (e.g. ChatGPT) in Our Professions and for Evaluation," led by Emmanuel Jeannot.
- DR2 recruitment competition jury.
- CPJ Rennes selection committee.

1994–1995 In charge of the Industrial and technology transfer (Valorisation et des Relations Industrielles) at Inria Sophia-Antipolis.

1994–1995 Member of the "Parallel computing" committee of Inria Sophia-Antipolis.

Boards, committees, etc.

Since 2021 – Founding Member of the African Society in Digital Sciences (ASDS) initiative.

2018 – Member of the Scientific Council for the evaluation of the International Laboratory for Research in Computer Science and Applied Mathematics (LIRIMA) September 18-19, 2018.

2004–2006 – External member of the Doctoral school Council (École doctorale) for *Physics, Modeling and Engineer Sciences* of Marseille.

2003–2006 – Executive Board (conseil de laboratoire) representative member of Irisa.

1996–2000 – Executive Board (conseil de laboratoire) member of LATP (Laboratoire d'Analyse, Topologie, Probabilités) - UMR 6632 - Marseille.

1996–1997 – Steering committee member of the "Centre de rencontres et d'échanges en modélisation pour l'ingénierie scientifique" (Cremis), Marseille.

1996–1997 – Member of the expert board for the "software package pole" project specification for the Europôle de l'Arbois.

1994–1995 – Head of the Connection Machine users group for the PACA region.

Expertise activities

2018 – Hcéres academic expert member for the evaluation of the unit "Applied Mathematics and Informatics from Genome to the Environment" (MaIAGE) of InraE.

2017 – Reviewer for the Swiss National Science Foundation Swiss National Science Foundation (SNSF) Div. Mathematics, Physical and Engineering Sciences

2016, 2009, 2008 – Expert for the French National Research Agency (ANR) for different programs.

2013–2019 – Member of the "NICE" committee in charge of the invitations of researchers at Inria Méditerranée.

2012 – Expert for the evaluation of multidisciplinary pathfinder projects (Projets exploratoires pluridisciplinaires, PEPS) CNRS/Inserm/Inria

2009 – Expert for the program "Groupement de Recherche en Automatisation Intégrée et Systèmes Homme-Machine" (GRAISyHM) MENESR and région Nord-Pas de Calais.

2007–2008 – Expert for the région Ile-de-France doctoral and post-doctoral grant committee.

2008–2009 – Panel member of "Sarima STIC" for the creation of the GIS Sarima II.

2005–2008 – Advisory capacities of Sarima Scientific Interest Group (GIS) for Madagascar. Sarima is administered by the Ministry of Foreign Affairs through the Priority Solidarity Funds (Fonds de Solidarité Prioritaire, FSP).

Elected member of

2006–2008 – Deputy representative member of the Inria "Administrative parity commission" (Commission administrative paritaire).

2000–2001 – Representative member of the Scientific Board of Inria.

Member of Juries of PhD defences (from 2008)

2023 • December 19, Jana Jaherddine (Sorbonne Université), *Stochastic models of protein production in bacterial cells: analysis of regulation mechanisms for transcription and translation phases*, member of the jury and reviewer.

2022 • April 8, Gaëtan Vignoud (Sorbonne Université), *Étude de la plasticité synaptique dans les réseaux stochastiques de neurones*, member of the jury and reviewer.

2019 • June 20, Nicolas Thomas (Sorbonne Université), *Stochastic numerical methods for Piecewise Deterministic Markov Processes. Applications in Neuroscience*, member of the jury and reviewer. • January 28, Tianyi Yu (Université Bretagne Loire), *On-line decomposition of iEMG signals using GPU-implemented Bayesian filtering*, member of the jury and reviewer.

2017 • January 11, Renaud Dessalles (École Polytechnique, Université Paris-Saclay), *Stochastic models for protein production: the impact of autoregulation, cell cycle and protein production interactions on gene expression*, member of the jury and reviewer. • July 7, Nicolas Bajeux (Université Côte d'Azur), *Modélisation de stratégies d'introduction de populations, effets Allee et stochasticité*, member of the jury.

2015 • Étienne Descamps (AgroParisTech), *Approche de modélisation Monte-Carlo individu-centrée opérant par événements discrets appliquée à un procédé d'homogénéisation d'une émulsion laitière*, member of the jury and reviewer.

2014 • June 17, Yuting Chen (École Centrale Paris), *Inférence bayésienne dans les modèles de croissance de plantes pour la prévision et la caractérisation des incertitudes*, member of the jury and reviewer.

2012 • December 13, Quentin Molto (Université des Antilles et de la Guyane), *Estimation de biomasse en forêt tropicale humide Propagation des incertitudes dans la modélisation de la distribution spatiale de la biomasse en Guyane française*, member of the jury and reviewer. • June 25, Jean-Louis Marchand (Université de Rennes 1), *Conditionnement de processus markoviens*, member of the jury and reviewer.

2011 • Xuan-Binh Lam (Université Rennes 1), *Uncertainty quantication for stochastic subspace identification method*, member of the jury and reviewer. • September 21, Nelly Jean-Baptiste Dit Parny (Université de Toulouse), *Assimilation de données pour l'estimation de l'état hydraulique d'un aménagement hydroélectrique du Rhône équipé de la commande prédictive*, member of the jury and reviewer.

2009 • May 31, Benoît Landelle (Université de Paris XI Orsay), *Étude statistique du Problème de la Trajectographie Passive*, member of the jury and reviewer. • June 25, Julien Cornebise (Université Pierre et Marie Curie), *Méthodes de Monte Carlo Séquentielles Adaptatives*, member of the jury and reviewer.

2008 • January 19, André Totohasina (Université de Fianarantsoa), habilitation à diriger des recherches, member of the jury and reviewer. • December 19, Thomas Romary (Université Pierre et Marie Curie), *Inversion des modèles stochastiques de milieux hétérogènes*, member of the jury and reviewer.

2005 • Thomas Bréhard (Université de Rennes 1), *Estimation séquentielle et analyse de performances pour un problème de filtrage non linéaire partiellement observé : application à la trajectographie par mesure d'angles*, member of the jury. • David Bourgeois (Université de Cergy-Pontoise), *Apport du modèle ionosphérique Multi-Quasi-Parabolique aux algorithmes de pistage appliqués au radar transhorizon Nostradamus*, member of the jury.

Participation to recruitment juries

2024 – Jury for the recruitment of Senior researchers, 2nd class, at Inria.

2024 – Jury for the recruitment of a Chair of junior professor, at Inria Inria centre at Rennes University.

2016 – Jury of the Researchers competition, Inria centre at Université Côte d'Azur.

2015 – President of the Jury for the recruitment of an Assistant Professor (chargé de recherche) *applied probability, stochastic modelling, statistics* (section 26), Université of Bordeaux.

2013 – Jury for the recruitment of a Professor in *probability and statistics* (section 26), Université of Montpellier 2.

2011 – Jury of the Researchers competition, Inra.

2010 – Jury of the Researchers competition, Inria centre at Université Côte d'Azur.

2010 – Jury for the recruitment of an assistant researcher in applied statistics at the Cirad.

2008 – Jury of the Researchers competition, *statistics and statistical modelisation*, Inra.

1995 – Jury of the Researchers competition, Inria Sophia Antipolis.

Reviewers • **for journals:** Abstract and Applied Analysis, Automatica, Bernoulli, Chemical Engineering Science, Discrete and Continuous Dynamical Systems B, Ecological Complexity, Ecological Modelling, Environmental Modeling and Assessment, ICES Journal of Marine Science, IEEE Trans. on Signal Processing, IEEE Trans. on Aerospace and Electronic Systems, IEEE Trans. on Control Systems Technology, IMA Journal of Numerical Analysis, Journal of Applied Probability/Advances in Applied Probability, Journal on Control and Optimization, Journal of Optimization Theory and Applications, Journal of Mathematical Biology, Mathematical Biosciences, Mathematical and Computer Modelling of Dynamical Systems, Nonlinear Analysis: Hybrid Systems, Optimal Control Application and Methods, SIAM Journal on Control and Optimization, Stochastic Analysis and Applications • **for conferences:** ACC, CARI, European Signal Processing Conference, ESAIM Proceedings and Surveys, European Control Conference IEEE Conference on Decision and Control, IFAC World Congress, SFDS.

Conference committees, etc. : • since 2007, Scientific Committee member of the "International African Conference on Research in Computer Science and Applied mathematics" (Cari). • 2017 – Comité de lecture 8ème colloque, Tendances dans les Applications Mathématiques en Tunisie Algérie Maroc 10-13 Mai 2017, Hammamet, Tunisie • organisation of many sessions.

Non-scientific activities

since 2019 – Member of the "health and safety committee" at Inria Sophia-Antipolis.

1994–1995 – Member of the "comité de centre" at Inria Sophia-Antipolis.

1989–1993 – Member of the "health and safety committee" (commission hygiène et sécurité) at Inria Sophia-Antipolis.

Publications

Working papers & recent internal reports

[WP7] F. Campillo. `d.i.o.n.a.e.a.` – *Ouverture aux neurosciences par l'électrophysiologie des plantes*. Working paper. 2024[PDF, link].

[WP6] F. Campillo. *Hodgkin-Huxley voltage gated piecewise-deterministic Markov process modeling and simulation*. Working paper. 2024[PDF].

[WP5] F. Campillo. *Two-time-scale network of FitzHugh-Nagumo models and mean-field approximation*. Working paper. 2024[PDF].

[WP4] F. Campillo, M. Desroches, and L. Lemaire. *Multiscale modeling of Dravet syndrome*. Working paper. 2024[PDF].

[WP3] D. Fedorov, F. Campillo, M. Desroches, J. Piriz, and S. Rodrigues. *Bursting patterns in lateral Habenula neurons*. Working paper. 2024[PDF].

[WP2] F. Campillo, A. Chizhov, J. Danielewicz, M. Desroches, and S. Rodrigues. *DC project minimal*. Internal Report. 2023[PDF].

[WP1] F. Campillo, M. Desroches, and S. Rodrigues. *INCIN2X: Interface, control, and identification for neuroscience excitable experiments - An Initial Draft*. Internal Report. 2022[PDF].

Papers

[P29] S. Nyobe, F. Campillo, S. Moto, and V. Rossi. "The one step fixed-lag particle smoother as a strategy to improve the prediction step of particle filtering". *Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées*, 39. 2023. [link].

[P28] E. Pavlidis, F. Campillo, A. Goldbeter, and M. Desroches. "Multiple-timescale dynamics, mixed mode oscillations and mixed affective states in a model of Bipolar Disorder". *Cognitive Neurodynamics*. 2022.

[P27] F. Campillo, M. Chebbi, and S. Toumi. "Stochastic modeling for biotechnologies: Anaerobic model AM2b". *Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées*, 28: 13–23. 2019.

[P26] A. Chizhov, F. Campillo, M. Desroches, A. Guillamon, and S. Rodrigues. "Conductance-Based Refractory Density Approach for a Population of Bursting Neurons". *Bulletin of Mathematical Biology*, 81. 2019.

[P25] F. Campillo, N. Champagnat, and C. Fritsch. "On the variations of the principal eigenvalue with respect to a parameter in growth-fragmentation models". *Communication in Mathematical Sciences*, 15 (7): 1801–1819. 2017. Preprint hal.

[P24] F. Campillo, M. Chebbi, and S. Toumi. "Stochastic modeling for biotechnologies – Anaerobic model AM2b". *Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées*, 28. 2017.

[P23] F. Campillo, M. Joannides, and I. Larramendy-Valverde. "Parameter identification for a stochastic logistic growth model with extinction". *Communications in Statistics - Simulation and Computation*, 47 (3): 721–737. 2017. Preprint hal.

[P22] C. Fritsch, F. Campillo, and O. Ovaskainen. "A numerical approach to determine mutant invasion fitness and evolutionary singular strategies". *Theoretical Population Biology*, 115: 89–99. 2017.

[P21] F. Campillo, N. Champagnat, and C. Fritsch. "Links between deterministic and stochastic approaches for invasion in growth-fragmentation-death models". *Journal of Mathematical Biology*: 1–41. 2016. Preprint arxiv.

[P20] F. Campillo, M. Joannides, and I. Larramendy–Valverde. "Analysis and Approximation of a Stochastic Growth Model with Extinction". *Methodology and Computing in Applied Probability*, 18. 2016. Preprint hal.

[P19] C. Fritsch, J. Harmand, and F. Campillo. "A modeling approach of the chemostat". *Ecological Modelling*, 299 (0): 1–13. 2015. Preprint hal.

[P18] F. Campillo and C. Fritsch. "Weak convergence of a mass-structured individual-based model". *Applied Mathematics & Optimization*, 72 (1): 37–73. 2014. Preprint arxiv – Erratum: Applied Mathematics & Optimization 72(1):75-76, 2015 [link] – Alas, this paper contains another more fundamental error: a compactness assumption is violated preventing to prove the uniqueness of the IBM, it is possible to circumvent this difficulty by assuming that the underlying SDE lives in a compact set, which is not a problem in terms of applications; however, we are looking for a more mathematically elegant approach.

[P17] F. Campillo, D. Hervé, A. Raherinirina, and R. Rakotozafy. "Markov analysis of land use dynamics: A case study in Madagascar". *Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées*, 17: 1–22. 2014. Preprint hal.

[P16] F. Campillo, M. Joannides, and I. Larramendy-Valverde. "Approximation of the Fokker-Planck equation of the stochastic chemostat". *Mathematics and Computers in Simulation*, 99: 37–53. 2014. Preprint arxiv.

[P15] C. Deygout, A. Lesne, F. Campillo, and A. Rapaport. "Homogenised model linking microscopic and macroscopic dynamics of a biofilm: Application to growth in a plug flow reactor". *Ecological Modelling*, 250: 15–24. 2013. Preprint hal.

[P14] F. Campillo and N. Champagnat. "Simulation and analysis of an individual-based model for graph-structured plant dynamics". *Ecological Modelling*, 234: 93–105. 2012. Preprint hal.

[P13] F. Campillo and C. Lobry. "Effect of population size in a predator-prey model". *Ecological Modelling*, 246: 1–10. 2012. Preprint arxiv.

[P12] F. Campillo, M. Joannides, and I. Larramendy-Valverde. "Stochastic modeling of the chemostat". *Ecological Modelling*, 222 (15): 2676–2689. 2011. Preprint hal.

[P11] F. Campillo, R. Rakotozafy, and V. Rossi. "Parallel and interacting Markov chain Monte Carlo algorithm". *Mathematics and Computers in Simulation*, 79: 3424–3433. 2009. One of the ten 2009 Most Successfull IMACS papers in Mathematics and Computers in Simulation.

[P10] F. Campillo and V. Rossi. "Convolution particle filter for parameter estimation in general state-space models". *IEEE Transactions on Aerospace and Electronic Systems*, 45 (3): 1063–1071. 2009. Preprint hal.

[P9] F. Campillo, P. Cantet, R. Rakotozafy, and V. Rossi. "Méthodes MCMC en interaction pour l'évaluation de ressources naturelles". *Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées*, 8: 64–80. 2008.

[P8] F. Campillo, V. Rossi, and R. Rakotozafy. "Computational probability modeling and Bayesian inference". *Revue Africaine de la Recherche en Informatique et Mathématiques Appliquées – 2007 Conference in Honor of Claude Lobry*, 9: 123–143. 2008.

[P7] C. Gaucherel, F. Campillo, L. Misson, J. Guiot, and J.-J. Boreux. "Parameterization of a process-based tree-growth model: comparison of optimization, MCMC and particle filtering algorithms". *Environmental Modelling and Software*, 23 (10-11): 1280–1288. 2008.

[P6] F. Campillo and A. Lejay. "A Monte Carlo method without grid for a fractured porous domain model". *Monte Carlo Methods and Applications*, 8 (2): 129–148. 2002. Preprint hal.

[P5] F. Campillo, M. Klepstyna, and A. Piatnitski. "Homogenization of random parabolic operator with large potential". *Stochastic Processes and Their Applications*, 93: 57–85. 2001. Preprint hal.

[P4] F. Campillo and A. Lejay. "A Monte Carlo method to compute the exchange coefficient in the double porosity model". *Monte Carlo Methods and Applications*, 7 (1-2): 65–72. 2001. Preprint hal.

[P3] F. Campillo, Y. Kutoyants, and F. L. Gland. "Small noise asymptotics of the GLR test for off-line change detection in misspecified diffusion processes". *Stochastics and Stochastics Reports*, 70 (1-2): 109–129. 2000.

[P2] F. Campillo and F. Le Gland. "MLE for partially observed diffusions: direct maximization vs. the EM algorithm". *Stochastic Processes and their Applications*, 33 (2): 245–274. 1989. Preprint hal.

[P1] F. Campillo. "La méthode d'approximation de Gauss-Galerkin en filtrage non linéaire". *RAIRO M2AN*, 20 (2): 203–223. 1986. English translation available in hal.

Book chapters

[BC5] F. Campillo and A. P. Piatnitski. "Chapter 7 - Effective diffusion in vanishing viscosity". In: *Nonlinear Partial Differential Equations and their Applications*. Ed. by D. Cioranescu and J.-L. Lions. Elsevier, 133–145. 2002. Preprint hal.

[BC4] F. Campillo, M. Klepstyna, and A. Piatnitski. "Homogenization of random parabolic operator with large potential". In: *Proceedings of the Seventh Vilnius Conference, Vilnius, Lithuania, 12–18 August, 1998*. De Gruyter. 1999.

[BC3] F. Campillo. "Optimal ergodic control of nonlinear stochastic systems". In: *Probabilistic Methods in Applied Physics*. Ed. by P. Krée and W. Wedig. Springer–Verlag, 239–269. 1995. Preprint hal.

[BC2] F. Campillo and É. Pardoux. "Numerical methods in ergodic optimal stochastic control and application". In: *Applied Stochastic Analysis, Rutgers University 1991*. Ed. by I. Karatzas and D. Ocone. Springer–Verlag, 59–73. 1992.

[BC1] F. Campillo, F. Le Gland, and É. Pardoux. "Approximation of a stochastic ergodic control problem". In: *New Trends in Nonlinear Control Theory, Nantes 1988*. Ed. by J. Descusse, M. Fliess, A. Isidori, and D. Leborgne. Springer–Verlag, 379–395. 1989.

International conferences with selection panels

[IC36] F. Campillo. "Nonlinear filtering in neurosciences". In: *21st INFORMS Applied Probability Society Conference, June 28-30, Nancy, France*. Abstract. 2023.

[IC35] F. Campillo, M. Chebbi, and S. Toumi. "Stochastic modeling of the anaerobic model AM2b: Models at different scales". In: *13th Africain Conference on Research in Computer Science and Applied Mathematics (CARI 2016), Tunisia, Tunis, October 11-14*, 484–393. 2016. [link].

[IC34] F. Campillo. "Stochastic differential equations in population dynamics, between discrete and deterministic models". In: *American Mathematical Society, European Mathematical Society, Portuguese Mathematical Society, joint meeting, Porto, Portugal, June 10-13*. 2015. Abstract.

[IC33] A. Raherinirina, D. Hervé, and F. Campillo. "Inferring land use dynamics by semi-Markov model". In: *Twelfth African Conference on Research in Computer Science and Applied Mathematics (CARI 2014), Saint-Louis, Senegal*, 1–8. 2014. [link].

[IC32] F. Campillo, M. Joannides, and I. Larramendy-Valverde. "Stochastic models of a chemostat at different scales". In: *Applied Stochastic Models and Data Analysis (ASMDA2013) – The 15th Conference of the ASMDA International Society. Mataró, Barcelona, Spain, June 25-28*. 2013. Poster.

[IC31] B. Benyahia, F. Campillo, B. Cherki, and J. Harmand. "Particle filtering for the chemostat". In: *20th Mediterranean Conference on Control and Automation (MED 2012), Barcelona, Spain, July 3-6*, 364–371. 2012.

[IC30] A. Bize, F. Campillo, C. Deygout, C. Lobry, and M. Joannides. "An individual-based modeling approach for cellulose degradation by microbial biofilms". In: *Biofilm 5 International Conference, Paris, France, December 10-12*. 2012. Poster, *best poster award* [link].

[IC29]   F. Campillo and N. Champagnat. "An individual-based model for clonal plant dynamics". In: *MAMERN11: 4th International Conference on Approximation Methods and Numerical Modelling in Environment and Natural Resources, Saidia, Morocco, May 23-26*. 2011. [link].

[IC28]   F. Campillo and N. Champagnat. "Simulation and analysis of a Markovian individual-based model for clonal plant dynamics". In: *7th International Congress on Industrial and Applied Mathematics (ICIAM). Vancouver, Canada*. 2011. [link].

[IC27]   F. Campillo, M. Joannides, and I. Larramendy-Valverde. "Stochastic models for the chemostat". In: *MAMERN11: 4th International Conference on Approximation Methods and Numerical Modelling in Environment and Natural Resources, Saidia, Morocco, May 23-26*. 2011.

[IC26]   F. Campillo, M. Joannides, and I. Larramendy-Valverde. "Stochastic models for the chemostat". In: *7th International Congress on Industrial and Applied Mathematics (ICIAM). Vancouver, Canada*. 2011.

[IC25]   F. Campillo and M. Joannides. "Modèles logistiques déterministes et stochastiques". In: *Proceedings of the 10th International African Conference on Research in Computer Science and Applied mathematics (CARI'10), October 18–21, Yamoussoukro, Ivory Coast*. 2010. [link].

[IC24]   F. Campillo and M. Joannides. "A Markovian individual-based model for terrestrial plant dynamics". In: *International Conference on Approximation Methods and Numerical Modelling in Environment and Natural Resources, MAMERN'09, Pau, France*. 2009.

[IC23]   F. Campillo and N. Desassis. "Stochastic spatio-temporal modeling of forest dynamics". In: *International Biometric Conference, July 13-18, Dublin, Ireland*. Abstract. 2008.

[IC22]   F. Campillo, N. Desassis, and V. Rossi. "Individual-based modelling of spatio-temporal of forest dynamics". In: *Joint Meeting of the Statistical Society of Canada and the Société Française de Statistique May 25-29, Ottawa, Canada*. 2008. Abstract.

[IC21]   F. Campillo, A. Raherinirina, and R. Rakotozafy. "Un modèle markovien de transition agraire". In: *Proceedings of the 8th International African Conference on Research in Computer Science and Applied mathematics (CARI'08), October 27-30, Rabat, Morocco*. 2008.

[IC20]   F. Campillo, G. Canales, and L. Mevel. "Particle based confidence intervals". In: *International Operational Modal Analysis Conference (IOMAC), Copenhagen, Denmark*. 2007. [link].

[IC19]   F. Campillo, R. Rakotozafy, and V. Rossi. "Bayesian numerical inference for hidden Markov models". In: *International Conference on Applied Statistics for Development in Africa Sada'07, Cotonou, Benin*. 2007. [link].

[IC18]   F. Campillo, R. Rakotozafy, and V. Rossi. "Bayesian numerical inference for Markovian models – Application to tropical forest dynamics". In: *International Conference on Approximation Methods and Numerical Modelling in Environment and Natural Resources, MAMERN'07, Granada, Spain*. 2007.

[IC17]   F. Campillo, R. Rakotozafy, and V. Rossi. "Analyse bayésienne de modèles markoviens d'évolution de ressources naturelles". In: *Proceedings of the 9th International African Conference on Research in Computer Science and Applied mathematics (CARI'06), November 6-9, Cotonou, Benin*. 2006. [link].

[IC16]   F. Campillo and V. Rossi. "Convolution particle filtering for parameter estimation in general state-space models". In: *Proceedings of the 45th IEEE Conference on Decision and Control, San Diego, USA*, 2159–2164. 2006.

[IC15]   F. Campillo and L. Mevel. "Recursive maximum likelihood estimation for structural health monitoring: tangent filter implementations". In: *Proceedings of the 44th IEEE Conference on Decision and Control and European Control Conference ECC 2005, Seville, Spain*. IEEE–CSS. 2005.

[IC14] Q. Zhang, F. Campillo, F. Cérou, and F. LeGland. "Nonlinear system fault detection and isolation based on bootstrap particle filters". In: *Proceedings of the joint 44th IEEE Conference on Decision and Control and 8th European Control Conference, Seville, Spain*, 3821–3826. 2005.

[IC13] F. Campillo and R. Rakotozafy. "MCMC for nonlinear/non–Gaussian state–space models, Application to fishery stock assessment". In: *CARI'04*. Hammamet, Tunisia, 484–393. 2004. [link].

[IC12] F. Campillo, M. Klepstyna, and A. Piatnitski. "Homogenization of random parabolic operator with large potential in locally periodic media". In: *Applied Stochastic Models and Data Analysis (ASMDA), Université de Technologie de Compiègne, France*. Ed. by G. Govaert, J. Janssen, and N. Limnios, 277–282. 2001.

[IC11] F. Campillo. "Numerical methods in ergodic control - Application to semi-active shock-absorbers". In: *International Conference on Systems, Signals, Control, Computers (SS-CC'98), Durban, South Africa*. 1998.

[IC10] F. Campillo and A. Traoré. "A stabilization algorithm for linear controlled SDE's". In: *34th IEEE Conference on Decision and Control, New Orleans, LA, United States*. New Orleans, LA, United States. 1995.

[IC9] F. Campillo and A. Traoré. "A stabilization algorithm for linear SDE's". In: *Proceedings of the Third European Control Conference, Roma, Italy*, 901–906. 1995. [link].

[IC8] F. Campillo and F. Le Gland. "Threshold selection in the GLR test for change detection in partially observed diffusion processes". In: *Proceedings of the 2nd European Control Conference, Groningen, Netherlands, June 28-July 1*. 1993.

[IC7] F. Campillo, F. Cérou, and É. Pardoux. "Numerical method for ergodic stochastic control problems: Application to vehicle suspension systems". In: *Proceedings of the 31st IEEE Conference on Decision and Control, Tucson, Arizona, United States*, 2056–2061. 1992.

[IC6] F. Campillo and F. Le Gland. "Likelihood-based statistics for partially observed diffusion processes". In: *Proceedings of the 1st European Control Conference, Grenoble, France, July 2-5*. 1991. [link].

[IC5] F. Campillo, F. Le Gland, and Y. Kutoyants. "Asymptotics of the GLR test for the disorder problem in diffusion processes". In: *Proceedings of the 30th IEEE Conference on Decision and Control (CDC), Brighton, England*. 1991.

[IC4] F. Campillo, J. Nekkachi, and É. Pardoux. "Numerical methods in ergodic stochastic control, application to semi-active vehicle suspensions". In: *Proceedings of the 29th IEEE Conference on Decision and Control, Honolulu, Hawaii, United States*, 2350–2353. 1990.

[IC3] F. Campillo. "Optimal ergodic control for a class of nonlinear stochastic systems – Application to Semi-Active Vehicle Suspensions". In: *Proceedings of the 28th IEEE Conference on Decision and Control, Tampa, Florida, United States*, 1190–1195. 1989.

[IC2] S. Bellizzi, F. Campillo, R. Bouc, and É. Pardoux. "Contrôle optimal semi-actif de suspension de véhicule". In: *Analysis and Optimization of Systems, Antibes, France*. Ed. by A. Bensoussan and J. Lions. Springer–Verlag, 689–699. 1988.

[IC1] F. Campillo and F. Le Gland. "MLE for partially observed diffusions: direct maximization vs the EM algorithm". In: *26th IEEE Conference on Decision and Control, Los Angeles, CA, United States, December 9-11*. Ed. by W. S. Levine and J. Baillieul. 1987.

National conferences with selection panels

[NC5] F. Campillo and R. Rakotozafy. "Modèles à espace d'états non linéaires/non gaussiens et inférence bayésienne par méthode MCMC - une application en évaluation des stocks halieutiques". In: *XXXVIèmes Journées de Statistique, Montpellier, France, May 24-28*. 2004. [link].

[NC4] L. Dudoignon, E. Remy, J.-L. Risler, and F. Campillo. "Variation du taux d'évolution le long de séquences de protéines". In: *Recueil des Actes des Journées Ouvertes Biologie Informatique Mathématiques – JOBIM, Toulouse, France*. Ed. by L. Duret, C. Gaspin, and T. Schiex. 2001.

[NC3] F. Campillo and F. Le Gland. "Application du filtrage non linéaire optimal à la restitution d'orbite de transfert". In: *Mécanique Spatiale, Toulouse, France, 1989*. Cepadues. 1990.

[NC2] F. Campillo and F. Le Gland. "Approximation particulaire en filtrage non linéaire. Application à la trajectographie". In: *22ème Congrès National d'Analyse Numérique, May 28-June 1st, Loctudy, France*, 242–243. 1990.

[NC1] F. Campillo and F. Le Gland. "Application du filtrage non-linéaire en trajectographie passive". In: *12ème Colloque GRETSI sur le Traitement du Signal, Juan-les-Pins, France, June 12-16*. 1989.

Other conferences

[OC9] F. Campillo. *Nonlinear filtering in neurosciences ?* 21st INFORMS Applied Probability Society Conference, Nancy, France, June 28-30. 2023Abstract.

[OC8] A. Bize, F. Campillo, C. Deygout, and M. Joannides. "Un modèle individu-centré de dégradation bactérienne d'une bille de cellulose". In: *Les Biofilms au service des Biotechnologies – Journées thématiques du Réseau National Biofilm, January 24-26, Narbonne, France*. 2012.

[OC7] F. Campillo, N. Desassis, and V. Rossi. "Modélisation spatialement explicite d'une dynamique forestière et inférence". In: *Journées MAS de la SMAI, Rennes*. 2008. Abstract.

[OC6] F. Campillo and É. Remy. *Calcul de perméabilité effective par méthode de Monte Carlo.* Journées Scientifiques de l'Andra, Nancy, France. 1999.

[OC5] F. Campillo and F. Cérou. "Stability of nonlinear filters". In: *Workshop on Statistical Inference for Stochastic Processes, Sandbjerg Manor, Denmark*. 1996.

[OC4] H. Bernier, F. Campillo, F. Cérou, F. L. Gland, and R. Rakotozafy. "Massively parallel computing for non–linear filtering". In: *Science on the Connection Machine System, Proceedings of the 2nd European CM Users Meeting, Meudon 1993*. Ed. by J. M. Alimi, A. Serna, and H. Scholl. Cambridge, MA: Thinking Machines Corporation, 81–91. 1995.

[OC3] F. Campillo and A. Traoré. "A stabilization algorithm for linear controlled SDE's". In: *International Conference on Non Linear Stochastic Dynamics, 7-10 December*. Hanoi, Vietnam, 85–95. 1995.

[OC2] F. Campillo and S. Bellizzi. "Méthode de gradient stochastique pour le contrôle de suspensions semi-actives". In: *Contrôle Actif Vibro-Acoustique et Dynamique Acoustique, Rencontres Scientifiques du Cinquantenaire du LMA, Marseille, France*. Marseille: CNRS, 189–198. 1991.

[OC1] F. Campillo. "Testing for a change-point in linear systems with incomplete observation". In: *Asymptotic theory for non i.i.d. processes (Luminy-Marseille, 1984)*. Brussels: Publications des Facultés Universitaires Saint–Louis, 225–242. 1986. [link].

Reports

[R10] F. Campillo. *The Gauss-Galerkin approximation method in nonlinear filtering.* hal-039-85941. English translation of "Fabien Campillo. La méthode d'approximation de Gauss-Galerkin en filtrage non linéaire. RAIRO M2AN, 20(2): 203-223, 1986". [link]. 2023.

[R9] B. Aymard, F. Campillo, and R. Veltz. *Mean-field limit of interacting 2D nonlinear stochastic spiking neurons.* arXiv 1906.10232. 2019.

[R8] F. Campillo and C. Lobry. "Le chémostat IBM". *HAL Id: hal-00841986.* 2010. [link].

[R7]   F. Campillo and M. Joannides. "A spatially explicit Markovian individual-based model for terrestrial plant dynamics". *ArXiv e-prints*. 2009. [link].

[R6]   F. Campillo. *Markovian individual-based models in computational ecology*. Tech. rep. ANR project MODECOL – Intermediate report. 2009.

[R5]   F. Campillo and L. Dudoignon. *Un modèle probabiliste d'évolution de protéines*. Rapport de Recherche RR-4332. INRIA. 2001. [link].

[R4]   F. Campillo, F. Cérou, F. L. Gland, and R. Rakotozafy. *Particle and cell approximations for nonlinear filtering*. Rapport de Recherche RR-2567. INRIA. 1995. [link].

[R3]   H. Bernier, F. Campillo, F. Cérou, and F. L. Gland. *Parallélisme de données et filtrage non linéaire - analyse de performance*. Rapport Technique RT–167. INRIA. 1994. [link].

[R2]   F. Campillo and A. Traoré. *Lyapunov exponents of controlled SDE's and stabilizability property : Some examples*. Rapport de Recherche RR-2397. INRIA. 1994. [link].

[R1]   F. Campillo, F. Le Gland, and Y. Kutoyants. *Asymptotics of the GLRT for the disorder problem in diffusion processes*. Rapport de Recherche RR–1735. INRIA. 1992. [link].

Specials issues

[OP2]   J. M. Van Groenendael, C. Mony, M. Garbey, F. Campillo, and A. El Hamidi, eds. *Modelling clonal plant growth: From ecological concepts to mathematics*. Ecological Modelling, Special Issue. [link]. 2012.

[OP1]   F. Campillo, ed. *Bulletin de Liaison de la Recherche en Informatique et en Automatique 141*. INRIA, Numéro consacré aux études menées en calcul massivement parallèle autour de la Connection Machine à l'Inria Sophia–Antipolis. 1993. [link].

Theses and "habilitation"

[T3]   F. Campillo. "Quelques applications des processus de diffusion: filtrage/statistique - contrôle - homogénéisation". Habilitation à diriger des recherches. Université de Rennes 1. 2004. [link].

[T2]   F. Campillo. "Filtrage et Détection de Ruptures de Processus Partiellement Observées". PhD thesis. Thèse de Troisième Cycle, Université de Provence, Marseille. 1984. [link].

[T1]   F. Campillo. "La méthode d'approximation de Gauss-Galerkin – Application à l'équation du filtrage non linéaire". Mémoire de DEA. Université de Provence. 1982. [link].

Lecture notes and training materials

[LN16]   F. Campillo. *Processus stochastiques en temps continu pour la modélisation en écologie*. Master de biostatistique, Universités Montpellier 1 et 2, SupAgro Montpellier, 2011-2015. 2015[link].

[LN15]   F. Campillo. *Modélisation stochastique de dynamiques de populations: simulation & analyse*. Module de formation doctorale I2S "Modélisation pour la biologie et l'écologie – Méthodes mathématiques et computationnelles". [link]. 2013.

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