

Denis Villemonais

CONTACT INFORMATION

Institut Élie Cartan de Lorraine *Mobile:* +33 6 07 03 73 93
Université de Lorraine *Fax:* +33 3 83 68 45 34
54506 Vandoeuvre-lès-Nancy *E-mail:* denis.villemonais@univ-lorraine.fr
France *WWW:* <http://www.normalesup.org/~villemonais/>

RESEARCH AND TEACHING POSITION

2024 - ... Full professor in applied mathematics in the [University of Strasbourg](#), inside [IRMA](#) and [UFR de mathématique et informatique](#)

2024 - ... Associate Editor of Applied Probability Trust

2023 - ... Junior member of the Institut Universitaire de France

2022 - 2024 Head of the department of *Applied Mathematics* at [École des Mines de Nancy](#)

2021 - ... Member of the Inria team project BIGS/SIMBA (INRIA, Nancy - Grand Est)

2012 - 2024 Professor assistant in applied mathematics in the [University of Lorraine](#), inside the [École des mines de Nancy](#) and the [Institut Élie Cartan de Nancy](#)

2015 - 2022 Head of the major *Mathematical Engineering* at [École des Mines de Nancy](#)

2016 - 2021 Elected member of the Conseil de l'[École des Mines de Nancy](#)

2012 - 2021 Member of the TOSCA team (INRIA, Nancy - Grand Est)

2011 - 2012 Post-doctoral position in the TOSCA team (INRIA) at the [Institut Élie Cartan de Nancy](#)

EDUCATION

2019 [University of Lorraine, IECL](#)

- Habilitation à diriger des recherches : “Exponential convergence to a quasi-stationary distribution and applications”
- Defended the 28th november 2019 at the [University of Lorraine](#).
- Jury: Michel Benaïm, Jean Bertoin, Pierre Collet, Anne Gégout-Petit, Bénédicte Haas, Tony Lelièvre, Sylvie Méléard, Ross Pinsky.

2007 - 2011 [École Polytechnique, CMAP](#)

- PhD Thesis in applied mathematics: “ Quasi-stationary distributions and particular method for the approximation of conditioned processes”
- PhD advisor: Professor Sylvie Méléard
- Defended the 28th november 2011 at the [École Polytechnique](#), with honours.
- Jury: Patrick Cattiaux, Pierre Collet, Pierre Del Moral, Jean-François Le Gall, Sylvie Méléard, Denis Talay, Steve N. Evans.

2004 - 2008 [École Normale Supérieure \(MP2004\)](#)

- 2007 - Master 2 in probability and statistic ([Université d’Orsay Paris XI](#))
- 2006 - Agrégation de mathématiques
- 2005 - Master 1 in mathematics ([Université d’Orsay Paris XI](#))
- 2005 - Licence 3 in mathematics ([Université d’Orsay Paris XI](#))

AFFILIATIONS

- Member of the SIMBA project team (Inria)
- Member of the MMB Chair (Mathematical Modelling and Biodiversity)
- Member of the GdR Mathematics, Health, Life Sciences
- Member of the scientific committee of the GdR Branchement
- Principal Investigator of the Associated Teams Inria program MAGO (Modelling and Analysis for Growth-fragmentation processes)

MAIN TALKS AND CONFERENCES

- 2024, Feb. Quelques résultats asymptotiques pour les systèmes de particules branchantes pondérées en temps discret, Séminaire de probabilités, Institut Fourier, Grenoble, France.
- 2023, Nov. Conférence du GdR Branchement, Toulouse, France (member of the organizing committee).
- 2023, Aug. Some consequences of strong-Feller, Feller and domination properties on quasi-stationary distributions, Celebrating the mathematics of Michel Benaïm, Lausanne, Swiss.
- 2023, Jun. Invited session Quasi-stationary distributions in numerical stochastic methods and statistics, Informs 2023, Nancy, France (co-organizer)
- 2023, Jun. On asymptotic results for discrete time weighted branching particle systems, Informs 2023, Nancy, France.
- 2022, Dec. Critères de type Meyn-Tweedie pour l'étude de la quasi-stationarité, Séminaire Calcul stochastique, Université de Strasbourg, France.
- 2022, Nov. Fluctuations d'urnes équilibrées avec une infinité de couleurs, Séminaire probabilités et statistiques, Université d'Orsay, France.
- 2022, May Fluctuations d'urnes équilibrées avec une infinité de couleurs, Journées de Probabilités 2022, Orsay, France.
- 2022, Apr. Conference Pólya urns, stochastic approximation and quasi-stationary distributions: new developments in Bath, United Kingdom (co-organizer)
- 2021, Nov. Quasi-stationary distributions and applications, Biostochastic Networks 2021, University of Valparaiso, Chile (online).
- 2021, Oct. Almost Sure Convergence of Measure Valued Pólya Processes, Stochastic Dynamics for Complex Systems, University of Vienna, Austria (online).
- 2021, Sep. Almost Sure Convergence of Measure Valued Pólya Processes, Neutron Transport Days of the Bath-Beijing-Paris Branching Structures Meeting, University of Bath, United Kingdom (online).
- 2021, May Almost Sure Convergence of Measure Valued Pólya Processes, Siam conference (online).
- 2020, Sep. Almost sure convergence of Measure Valued Pólya Processes, Stochastic Processes under Constraints, Oberwolfach, Germany.

- 2020, Feb. Convergence exponentielle vers une distribution quasi-stationnaire et applications, Seminar of probability, Toulouse.
- 2019, Apr. Critères de type Meyn-Tweedie pour l'étude de la quasi-stationarité, Seminar LAGA, University Paris 13.
- 2019, Mar. General criteria for the study of quasi-stationarity, Seminar on stochastic processes, University of Zurich, Switzerland.
- 2018, Mar. Non-failable approximation method for conditioned distributions, Algorithms & Computationally Intensive Inference Seminar of the University of Warwick, United Kingdom.
- 2018, Feb. Exponential convergence of conditioned Markov processes, Joint Risk & Stochastics and Financial Mathematics Seminar, London School of Economics, United Kingdom.
- 2017, Oct. Non-failable approximation method for conditioned distributions, Seminar of the Probability Laboratory of Bath, United Kingdom.
- 2017, Sep. Conference on quasi-stationary distribution in Paderborn, Germany (co-organizer)
→ <http://math.uni-paderborn.de/ag/arbeits...erenzen/>
- 2017, Mar. Exponential convergence of conditioned Markov processes, Stochastic Analysis Seminar at Imperial College, London, United Kingdom
- 2016, Nov. Courbure de Wasserstein pour certains systèmes de particules en interaction, Séminaire de calcul stochastique at University of Strasbourg, France
- 2016, Dec. Criterion for the exponential convergence of conditioned processes, School on Information and Randomness 2016, Santiago, Chile
- 2016, Aug. New general criterion for the exponential convergence of conditioned processes, invited speaker at 13ème colloque Franco-Roumain, Iasi, Romania
- 2016, Jul. New general criterion for the exponential convergence of conditioned processes, invited speaker at international workshop *Stochastic Processes under Constraints*, Augsburg, Germany
- 2015, Nov. Lessons on quasi-stationary distributions at ANR STAB days, University Pierre et Marie Curie, Paris, France
- 2015, May. Organization of the mini-symposium *Processus aléatoires en interaction*, Congrès SMAI 2015
- 2013, Mar. Lessons on quasi-stationary distributions and Fleming-Viot processes, *Genetic models and quasi-stationarity* at CIRM, France

COMPUTER SKILLS
(USED FOR
TEACHING OR
RESEARCH)

- C++ (simulation of Fleming-Viot type processes and teaching at École Polytechnique)
- R (statistical study of telomer length distribution and teaching at École des Mines de Nancy)
- SAS (teaching at École des Mines de Nancy)
- Scilab and Matlab (teaching at École des Mines de Nancy and École Polytechnique)
- Python (project supervision at École des Mines de Nancy)