

# Djalil CHAFAI – Brief CV

Birth: 1973-06-15. Sex: Male. Citizenships: Algerian & French. Email: [djalil@chafai.net](mailto:djalil@chafai.net)  
General scientific profile: mostly mathematician, amateur of physics and of computer science.  
Domains of expertise: mathematical analysis, probability theory, statistical physics.

## Academic positions

- 2013 – Professor of mathematics, Université Paris-Dauphine / PSL (CEREMADE/MIDO)
- 2011 – 2017 Part time professor of mathematics, École Polytechnique (CMAP)
- 2009 – 2013 Professor of mathematics, Université Paris-Est Marne-la-Vallée (LAMA)
- 2003 – 2009 Junior Research Associate, Institut National de la Recherche Agronomique (INRA)
- 2002 – 2003 Postdoctoral researcher MathFIT/EPSRC/LMS, University of Oxford (leader: Terry Lyons)

## Other experiences

- 1999 – 2000 National service, Météo-France Research Center  
Research Engineer in the IASI satellite data assimilation team (leader: Florence Rabier)

## Education

- 2008 Habilitation à Diriger des Recherches, Université de Toulouse (mentor: Dominique Bakry)
- 2002 Doctorate in Mathematics, Université de Toulouse (advisor: Michel Ledoux)
- 1997 Master of Applied Mathematics (DEA), Université de Toulouse
- 1996 Agrégation de mathématiques

## Awards

- 2012 – 2017 Junior member of Institut Universitaire de France (IUF)
- 2012 Prix de Mathématiques Maurice Audin

## Exceptional service to the community

- 2017 – 2020 Vice-president of Université Paris-Dauphine in charge of digital strategy
- 2012 – 2015 Managing and Production Editor for the academic journals EJP and ECP
- 2012 – 2013 Director of Université Paris-Est Doctoral School on Mathematics and Information Technology

## Additional editorial tasks

- 2012 – 2020 Associate Editor of EJP & ECP (IMS & Bernoulli Society Journals)
- 2012 – 2019 Co-Editor in Chief of ESAIM Proceeding and Surveys (SMAI journal)  
Together with Pauline Lafitte, Tony Lelièvre, Clément Mouhot then Cyril Imbert

## Research interests (up to now)

- Markov processes/semigroups, their equilibrium/geometry
- Sobolev type inequalities and partial differential equations
- Poisson and Gauss measures, heat kernels, limit theorems
- Stochastic models and stochastic inverse problems:
  - Mathematical Biology (pharmacology, biostatistics)
  - Mathematical Physics (spin systems, statistical mechanics)
  - Computer Science (data streams processing, queuing)
  - Earth Science (variational assimilation in meteorology)
- Geometric functional analysis, concentration, convexity, isoperimetry
- Random matrices, random graphs, and high dimensional phenomena
- Boltzmann-Shannon and Voiculescu entropies, information theory
- Random structures and algorithms, stochastic simulation

## Scientific activity

- Profiles: HAL zbMATH MathSciNet GoogleScholar arXiv ORCID Semantic Scholar
- Numbers: 40+ articles, 3+ research books, 3+ teaching books.
- Co-organized conferences include Hong Kong, Paris, Kyoto, New York
- Former or current PhD students include Bertrand Cloez, Raphaël Butez, David García-Zelada.

## Favorite theorem (arXiv:0808.1502)

If  $M$  is uniformly distributed on the polytope of  $n \times n$  Markov transition matrices, then  $\frac{1}{n} \sum_{\lambda \in \text{spec}(M)} \delta_{\sqrt{n}\lambda}$  converges weakly as  $n \rightarrow \infty$  to the uniform distribution on the unit disc of the complex plane.

Last update on December 19, 2019. More information on <http://djalil.chafai.net/>