JULIEN RANDON-FURLING

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Nationality French

Date of Birth 4 oct. 1982

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Work experience

Sept. 2010 – to date	**Senior Associate Professor, Université Paris 1 Panthéon Sorbonne** Faculty of Mathematics & Computer Science, *Dpt SAMM (Statistics, Analysis, Multidisciplinary Modeling)*
2020 –	Alliance Visiting Professor, Dpt of Mathematics, **Columbia University** (New York)
Nov. – Dec. 2021	Visiting Researcher, **Euler International Math. Institute** (St Petersburg, Russia)
May 2021	Visiting Researcher, **Santa Fe Institute** for Complex Systems (Santa Fe, USA)
2016 – to date	Adjunct Professor **PSL** (*Paris Sciences & Lettres Research University*)
2014 & 2016	**European Union Mobility Professorships** Univ. Ca' Foscari (Venice, Italy) - Univ. Federico II (Naples, Italy)
Sept. 2009 – 2010	Postdoctoral Researcher, German National Research Agency (*DFG*) Team of Prof. Heiko Rieger ***Complex Systems & Statistical Physics***, Universität des Saarlandes (Saarbrücken, Germany)
Sept. 2006 – 2009	**Science Demonstrator** Palais de la Découverte / Universcience (National Science Museum), Paris

Education

2018	***Habilitation* in Mathematical Sciences** Université Paris 1 Panthéon Sorbonne
2006 – 2009	**PhD in Statistical Physics - Univ. Paris-Sud Orsay / Paris-Saclay** Extreme value statistics of Brownian motion (adv.: S. N. Majumdar, A. Comtet) "*Très honorable et Félicitations du Jury" – Summa cum laude*
2002 – 2006	**Master of Mathematics & Mathematical Sciences, Univ. of Cambridge** England, United Kingdom BA Mathematics + "Part III Maths" (M.Math) – *1st Class Honours*
2000 – 2002	*Classes Préparatoires aux Grandes Écoles* (Maths & Physics track) Lycée Louis-le-Grand, Paris
1997 – 2000	Science Baccalaureate "*Félicitations du Jury" - Summa cum laude* Awarded the **national prize** for *Philosophy Dissertation* at ***Concours Général*** (France's oldest nationwide high school competition, created in 1747)

Organizing / Administration / Expertise / Awards / Other [since 2010]

BASIS Award (Foundation for the Advancement of Theoretical Physics and Mathematics)
with Prof. Dmitry Zaporozhets. July 2019
invited at the St Petersburg Dpt of the V.A. Steklov Institute of Mathematics, **Russian Academy of Sciences**

Alliance Fellowship – Long-Term Visiting Scholar Program at Columbia University, New York

Recipient of the national award for research (PEDR) since 2017 (top 20% scientists in France)

Recipient of a CRCT (Research sabbatical) Spring semester 2019

Member of the **scientific steering committee** of **Paris Institute for Complex Systems** (CNRS)

Referee for international peer-reviewed journals
Interdisciplinary: Nature Communications, PLOS One, Complexity, EPJ B, J. Stat., ...
Mathematics: Bull. of the London Mathematical Society, Stoch. Proc. & their Applications
Physics: Physical Review Letters, Physical Review E, EPL, J. of Stat. Mechanics, J. Phys. A

Jurys / Selection committees
- member of the selection committee for an Associate Professorship at Paris-1 (2018)
- member of the selection committee for all non-tenure track positions in Mathematics (Univ. Paris-1)
- jury member for the PhD thesis of N. Levernier (UPMC, dir : R. Voituriez, O. Bénichou ; 2017)

Member of the **Faculty Board** 2014-2018 & Coordinator of a list for the Univ. Senate (Paris-1, 2016)

Coordination of projects, programs & seminars:

2021	*Co-organizer of the annual **CNRS Stochastic Geometry Conference***
2021	*Organizer of the Paris-Columbia Alliance Conference on Complex Systems & Data* Dpt of Mathematics, Columbia University, April 10, 2020
2018	Co-Principal Investigator with Madalina Olteanu (Paris-1) and William Clark (UCLA) of a project for the **EU data challenge: D4I – Migration data in European cities**
2018-2019	Co-coordinator with historian Karine Le Bail (CNRS/EHESS) of an **interdisciplinary CNRS research project** "*France's post WW2 'Epuration' movement in the Arts: analysis and modeling of a complex social system, from individual trajectories to collective patterns*"
2017-2018	Organizer of a workshop series on the socio-spatial dynamics in the Paris area "*Faces of Paris"* **Atelier Campus Condorcet**
04/2017	Organizer of the workshop ***Topics in Random Geometry*** (funding: CNRS + Univ. Paris-1)
since 2014 :	Co-organizer of the **weekly seminar on Statistics, Analysis & Multidisciplinary Modeling** (Univ. Paris-1)
2019 2017 2015 2013 2011	Organizer of the biennial international and interdisciplinary conference: ***Interactions – Mathematical sciences put to the proof of human and social sciences*** (sponsored by Paris-1, Campus Condorcet, ISC-PIF, Île de France Region). Next edition in Oct. 2021

Publications & communications

Main scientific publications in international peer-reviewed journals:

20 – J. R-F, P. Salminen, P. Vallois:
On a first hit distribution of the running maximum of Brownian motion,
subm. to **Stoch. Proc. & Appl.** special issue in mem. Larry Shepp (2021)

19 – B. de Bruyne, J. R-F, S. Redner: *Optimisation and growth in first-passage resetting*,
J. Stat. Mech. 013203 (2021)

18 – J. R-F, D. Zaporozhets: *Convex hulls of several multidimensional Gaussian random walks*,
submitted to **Adv. in Appl. Prob.** (2021)

17 – B. de Bruyne, J. R-F, S. Redner: *Optimisation in first-passage resetting*,
Physical Review Letters 125 (5) 050602 (2020)

16 – M. Olteanu, J. R-F, and W. Clark *Segregation through the multiscalar lens*,
PNAS 116 (25) 12250 (2019)

15 – J. R-F, S. Redner (Santa Fe Institute, USA): *Residence time near an absorbing set*,
J. Stat. Mech. 103205 (2018)

14 – M. Olteanu, M. Cottrell, A. Hazan, J. R-F: *Multidimensional urban segregation: toward a neural network measure*, **Neural Computing & Applications** 31 (6) 1 (2018).

13 – J. R-F, M. Olteanu, A. Lucquiaud: *From urban segregation to spatial structure detection*,
Env. & Planning B: Urban Analytics and City Science 47 (4) 645 (2018)

12 – A. Nucit, J. R-F: *A network model for the propagation of Hepatitis C with HIV co-infection*,
J. Stat. Mech. 053205 (2017)

11 – J. R-F, F. Wespi (Univ. Berne, Suisse): *Facets on the convex hull of* d*-dimensional Brownian and Lévy motion*, **Physical Review E** 95, 032129. (2017).

10 – E. Ben-Naim, P.L. Krapivsky, J. R-F:
Maxima of two random walks: universal statistics of lead changes,
J. Phys. A: Math. & Theor. 49, 205003 (2016).

9 – J. R-F *From Markovian to non-Markovian persistence exponents*,
Europhysics Letters (EPL) 109 40015 (2015). "**Editor's choice**"

8 – J. R-F: *Universality and time-scale invariance for the shape of planar Lévy processes*,
Physical Review E 89, 052112 (2014).

7 – A. Hazan, J. R-F: *A Schelling model with switching agents: decreasing segregation via random allocation and social mobility,* **EPJ B** 86, 421. (2013)

6 – J. R-F: *Convex hull of n planar Brownian paths: an exact formula for the average number of edges*, **J. Phys. A: Math. & Theor**. 46, 015004. (2012). "**Highlight of 2013**"

5 – S.N. Majumdar, A. Comtet, J. R-F: *Random convex hulls and extreme-value statistics*,
J. Stat. Phys. 138 (6) 955. (2010)

4 - J. R-F, S.N. Majumdar, A. Comtet: *Convex hull of planar Brownian motion: exact results and an application to ecology*, **Physical Review Letters** 103, 140602. (2009)

3 - G. Schehr, S.N. Majumdar, A. Comtet, J. R-F: *Exact distribution of the maximal height of p vicious walkers*, **Physical Review Letters** 101, 150601. (2008)

2 - S.N. Majumdar, J. R-F, M.J. Kearney, M. Yor: *On the time to reach maximum for a variety of constrained Brownian motions*, **J. Phys. A: Math. & Theor.** 41, 365005. (2008)

1 - J. R-F, S.N. Majumdar: *Distribution of the time at which the deviation of a Brownian motion is maximum before its first-passage time*, **J. Stat. Mech.** P10008. (2007)

Main participations to peer-reviewed international conferences [in the last 5 years]

Nov 2021 "New Trends in Mathematical Stochastics"
[**Invited Plenary Speaker**]
Euler International Mathematical Institute, St Petersburg, Russia

Sep 2019 "Stochastic Geometry"
[**Invited Plenary Speaker**]
Euler International Mathematical Institute, St Petersburg, Russia

May 2019 "Brownian extreme-value problems"
[**Invited Plenary Speaker**]
SPSR 2019, Bucharest, Romania

Apr 2019 "The distorted city – Capturing the complexity of perceived segregation"
[**Invited Plenary Speaker**]
ECSR Workshop, EUI Florence, Italy

Apr 2019 "Analyzing spatial dissimilarities in high-resolution geo-data"
with M. Olteanu & W. Clark (UCLA, USA) – presented by M. Olteanu
ESANN, Bruges, Belgium

Dec 2018 "Assessing segregation in complex networks through a multi-focal approach"
with M. Olteanu (INRA-Paris-1) – talk given by JRF
[Communication]
International Conference on Methodological and Computational Statistics, Pisa, Italy

Nov 2018 "Migrations and Segregation in European Cities"
with M. Olteanu & W. Clark (UCLA, USA) – talk given by JRF
[**Invited Plenary Speaker**]
D4I European Commission Workshop, Brussels, Belgium

Oct 2018 "*L'épuration artistique en France : analyse et modélisation d'un système social complexe de trajectoires individuelles et collectives*"
with K. Le Bail (CNRS) – joint talk by K. Le Bail and JRF
[**Invited Plenary Speakers**]
Colloquium CNRS *INFINITI*, Institut Henri-Poincaré, Paris

Sept 2018 "Converging to the city: a myriad trajectories"
with W. Clark and M. Olteanu – talk given by JRF
[Communication]
CCS – World Conference on Complex Systems, Thessaloniki, Greece

Sept 2018 "Was there a `Medieval Literary Canon' in the Middle Ages?"
with J.-B. Camps (École nationale des Chartes) – talk given by J.-B. Camps
[Communication]
The Medieval Literary Canon In The Digital Age, Gent, Belgium

June 2018 "Lead changes between maxima of Lévy processes"
with E. Ben-Naim (Los Alamos, USA) & P. Krapivsky (Boston) – talk given by JRF
[Communication]
International Workshop on Applied Probability, Budapest, Hungary

June 2018 "A dynamic model of manuscript transmission"
with J.-B. Camps – talk given by J.-B. Camps
[Communication]
Computational Methods in the Humanities - ComHum 2018, Lausanne, Switzerland

May 2018 "Facets on higher-dimensional Lévy convex hulls"
[**Invited Plenary Speaker**]
Stochastic Geometry Days, Paris, France

Feb 2018 "Multiscalar sociospatial dynamics in the city"
with M. Olteanu – talk given by JRF [Plenary Talk]
BiFi *International Conf. on Complex Systems*, Zaragoza, Spain

Sept 2017 "Analyzing spatial dissimilarities via effective-time series"
with M. Olteanu – talk given by JRF
[Plenary Talk]
International Conference on Time Series, Granada, Spain

June 2017 "Multidimensional urban segregation: an exploratory case study"
with M. Cottrell (Paris-1), A. Hazan (UPEC) & M. Olteanu – talk given by JRF
[Plenary Communication]
Workshop on Self-Organizing Maps - WSOM+, Nancy, France

Sept 2016 "Not so wild guesses:
on the use of past information in certain statistical and stochastic models"
[**Invited Plenary Speaker**]
Journée Prévision & Incertitude de la Physique à l'Histoire, ENS Paris-Saclay

Feb 2016 "Convex hull of planar Brownian motion"
[Communication]
International Conference on Operations Research, La Habana, Cuba

June 2015 "On the shape of planar Lévy processes"
[Communication]
Statistical Mechanics, Integrability & Combinatorics, Galileo Institute, Florence, Italy