

## Positions And Academic Jobs

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In the context of the EU H2020 project FET NANOPHLOW we are seeking 4 highly qualified post-doctoral researchers for an exciting collaborative project on the fundamental challenges of thermodynamic gradient driven transport.

The postdoctoral positions will address complementary aspects related to the fundamental challenges of thermodynamic driving. The broad, theoretical approach will provide a systematic way to go beyond the state-of-the-art macroscopic descriptions of phoresis to capture the effects of the molecular nature of solvent and solute, solute size, solute and surface specificity, solute flexibility, surface wettability and heterogeneity, fluctuations and correlations.

1. The work in Barcelona will focus on the development and use of mesoscopic computational models to study the transport and rectification of soft matter and of biomolecules under strong confinement. The project will address the role of entropic transport and of capillarity in nanoscale transport mechanisms. Please contact prof I. Pagonabarraga ([ipagonabarraga@ub.edu](mailto:ipagonabarraga@ub.edu)) for more information and applications.

2. The work in Sorbonne Université will focus on molecular aspects, to address surface and fluid-specific effects on the flows induced by thermodynamic gradients at solid-liquid interfaces. This includes the development of molecular simulation strategies to evaluate osmotic flows, as well as the study of systems investigated experimentally within the NANOPHLOW consortium, such as flow through nanotubes. Please contact B. Rotenberg ([benjamin.rotenberg@sorbonne-universite.fr](mailto:benjamin.rotenberg@sorbonne-universite.fr)) for more information and applications.

3. The work at Paris-Sud University will be analytically oriented, with possible computational aspects depending on taste, targetting the study of thermodynamic gradient-driven phenomena. Charged as well as neutral systems will be investigated. Please contact prof. E. Trizac ([emmanuel.trizac@lptms.u-psud.fr](mailto:emmanuel.trizac@lptms.u-psud.fr)) for more information and applications.

4. The work in Utrecht will be largely based on the development of (dynamic) density functional theory for phoretic and osmotic transport through nanostructures as well as on the numerical calculation of solutions to the resulting Poisson-Nernst-Planck-Stokes-type equations of motion, where connection is to be made with ongoing experiments in the "Nanophlow" consortium. Please contact prof. R. van Roij ([r.vanroij@uu.nl](mailto:r.vanroij@uu.nl)) for more information and applications.

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Postdoctoral position about multi-scale modeling of plasticity in amorphous solids at the PMMH laboratory at ESPCI in Paris.

Motivated candidates should directly contact [sylvain.patinet@espci.fr](mailto:sylvain.patinet@espci.fr) with required materials. If you know any potential candidates, please encourage them to apply too.

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Tenured/Tenure-Track Faculty Positions in Artificial Intelligence and Machine Learning at Rensselaer

<https://rpijobs.rpi.edu/postings/6917>

Rensselaer is creating a research cluster in the area of Artificial Intelligence (AI) and Machine Learning (ML). We seek applications from outstanding candidates at all ranks (assistant, associate, and full professor) who will build upon our existing strengths in these and related areas across the Schools of Science, Engineering, Humanities, Arts and Social Sciences, Management, and Architecture. These faculty members can have academic appointments in any of the five Schools at Rensselaer depending on the candidate's background, interests, and the potential for collaboration.

Candidates with strong physics background and AI/ML expertise and applications in any sub fields of Physics are encouraged to apply.

Possible application areas include (but not limited to) statistical mechanics, condensed matter, network science, social and infrastructure networks, or complex systems.

Interested applicants should contact: Gyorgy Korniss, Professor of Physics, Department of Physics at Rensselaer Polytechnic Institute, korniss@rpi.edu(518) 276-2555 (phone) www.rpi.edu/~korniss/

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We are looking for postdoctoral fellows interested in performing experimental research at the interface between physics and biology. The aim of our group is to study the collective phenomena of life through a close interplay between experimental data on biological groups in their natural environment and statistical physics methods, as correlation functions, scaling and the renormalization group. We plan to work in systems as diverse as bird flocks, insect swarms, and cell colonies. The new experimental team will have the task to develop the new data-acquisition systems (both in 3D - flocks, swarms - and 2D - stem cells), to calibrate and test the new apparatus, and to conduct the data-acquisition campaigns. A strong emphasis will be put on the comparison between theory and experiments.

The postdocs will join the COBBS Group in Rome (Collective Behaviour in Biological Systems), at the Institute for Complex Systems of the CNR, and work under the supervision of Andrea Cavagna and Irene Giardina. The duration of the positions is two years, potentially extendable. The positions will be funded by the ERC Advanced Grant RG.BIO to Andrea Cavagna. More information about our group and this project can be found at [www.cobbs.it](http://www.cobbs.it).

Applications should be sent by email to [andrea.cavagna@roma1.infn.it](mailto:andrea.cavagna@roma1.infn.it); they should contain a cv and the contacts of senior scientists who can provide recommendation letters (only upon our request). Although there is no sharp deadline for these positions, earlier applications will naturally be given higher priority. We therefore encourage interested candidates to contact us immediately.

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Two postdoctoral position at ENS de Lyon, France, at the interfaces between climate dynamics, statistical physics, machine learning and data sciences.

For the first position, the project will use machine learning approaches, in relation with rare event algorithms, in order to study climate dynamics variability and climate extremes.

For the second position, the project is to study bistability and abrupt transitions undergone by atmospheric jets, in climate dynamics. This second position will be jointly supervised with Corentin Herbert.

For both positions, applicants should have a background in physics, applied mathematics, geophysical fluid dynamics, or climate dynamics.

Applicants could contact me by email and attach a CV and contact information of scientists who can provide recommendation letters upon request. Freddy Bouchet [freddy.bouchet@ens-lyon.fr](mailto:freddy.bouchet@ens-lyon.fr)

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Postdoctoral positions available at CC&B, University of Milan

Two openings for postdoctoral positions to work in computationally intense interdisciplinary research at the CC&B, University of Milan. We are looking for candidates with strong programming skills who are interested in working at the frontier between academic and industrial research. The candidates should have a Ph. D in computer science, computational materials science, physics, mathematics, engineering or related fields.

The positions will be for 1 year, renewable to a second one.

<http://complexitybiosystems.it/en/news/ccandb-is-hiring>

The theme of the first position is the development of algorithms for quantitative analysis of biological data, including images. The second position is focused on the automatic design of metamaterials in the framework the METADISGN project funded by a Proof-of-Concept grant from the European Research Council. Interested candidates should send their CV to: [stefano.zapperi@unimi.it](mailto:stefano.zapperi@unimi.it), [caterina.laporta@unimi.it](mailto:caterina.laporta@unimi.it).

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Two postdoctoral positions are immediately available for up to 3 years in NY City to work on deep learning and biological networks. This is a collaboration between the lab of Hernan Makse and Lucas Parra at City College of New York with Memorial Sloan Kettering Cancer Center in a newly formed MSK-CCNY Partnership for AI. The goal is to build an integrative model of biological networks to detect and cure cancers of the breast and brain. Email [hmakse@ccny.cuny.edu](mailto:hmakse@ccny.cuny.edu) and [parra@ccny.cuny.edu](mailto:parra@ccny.cuny.edu) with a resume, a list of recommenders and research interest. See [kcorelab.org](http://kcorelab.org) and [parralab.org](http://parralab.org) for details.

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**Postdoctoral position in neuroscience available immediately, Centre for Neural Dynamics of the University of Ottawa.**

The ideal training is in nonlinear/statistical physics. The theoretical research will focus on the dynamics of a population of core recurrent neurons within the hippocampus and their role in temporal and spatial memory.

The candidate will be involved in collaborations between A. Longtin, L. Maler, JC Béïque. Postdoctoral positions are available in theoretical or computational or experimental systems neuroscience. Each position is for one year with automatic renewal for a second year following satisfactory progress, and a possible extension to a third year. Interested candidates should submit their CV and a brief statement of research interests. The successful candidate would be a salaried employee of the University with a competitive remuneration and benefits package. From: Andre Longtin <[alongtin@uottawa.ca](mailto:alongtin@uottawa.ca)>

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Postdoc positions at IFISC, Mallorca, Spain, The Institute for Cross-Disciplinary Physics and Complex Systems (IFISC)Palma de Mallorca, Spain, offers up to three junior postdoc positions to work in any of the strategic lines of its María de Maeztu Unit of Excellence research program on Information processing in and by Complex Systems: Information processing in 1)Biological Systems, 2)Socio-technical Systems; Brain-inspired analog computing; Quantum information. More information at: <https://ifisc.uib-csic.es/en/about-ifisc/join-us/junior-postdoc-positions-within-maria-de-maeztu-unit-excellence/>

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**Postdoc position on wave turbulence at Institut Inphyni in Nice, France**

A 2-year postdoctoral position is now available at Inphyni in the frameworks of the Simons Foundation international collaboration project "Wave Turbulence". The project aims at developing solid theoretical foundations for wave turbulence systems and modelling experiments in wave turbulence performed in laboratory by partners of this collaboration. For details see:

[https://www.oca.eu/images/LAGRANGE/pages\\_perso/krstulovic/PostdocSIMONS2019.pdf](https://www.oca.eu/images/LAGRANGE/pages_perso/krstulovic/PostdocSIMONS2019.pdf)

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**Postdoc position on the quantification of innovation and collaborative dynamics in Science and Technology, Paris, France**

We currently offer a postdoc or research engineer position at the CRI Paris in the areas of Network Science, Data Science, Science of Science, Computational Social Science and Social Network Analysis. The successful applicant will join the team of M. Santolini at the CRI to work on interdisciplinary projects related to the quantification of innovation and collaborative dynamics in Science and Technology using large scale datasets and physics-inspired approaches. Relevant projects can be found on this job post. Relevant background include physics, computer science, network science, computational social sciences, or data science. Duration: 1+1 years

From: Marc Santolini <[marc.santolini@gmail.com](mailto:marc.santolini@gmail.com)>

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**Postdoctoral opportunities in the Physics of Biological Systems**

The Center for the Physics of Biological Function, <https://biophysics.princeton.edu>, is a joint effort between Princeton University and The Graduate Center of the City University of New York. We are 14 faculty working across the full range of biological organization, from single molecules to groups of organisms, united by our search for common physical principles underlying the beautiful phenomena of life. We are recruiting both theorists and experimentalists.

Details: <https://puwebp.princeton.edu/AcadHire/apply/application.xhtml?listingId=12904>.

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**Postdoc position "Schrödinger problem and Optimal Transport"**

**Group of Mathematical Physics of the University of Lisbon GFMUL, Portugal**

The position is funded for 24 months, starting December 2019 or January 2020.

The gross monthly salary is 1,509.80 Euros and there are no teaching duties.

The present call will be open from 16/09/2019 to 30/11/2019.

- Generalization of the Schrödinger Problem and its initial probabilistic solution to the analogous case of mixed quantum states, i.e much more general evolution scenarios between arbitrary probabilistic data - Numerical analysis and simulation of those dynamics. Construction of a notion of Stochastic Integrability.
- Fluid Dynamics, where the Navier-Stokes equation is interpreted as a stochastic deformation of the Euler equation.- Investigation of connections with the Benamou-Brenier approach, with particular emphasis on symmetries of the former equations.

Candidates are welcome to contact the project head Jean-Claude Zambrini

([iczambrini@fc.ul.pt](mailto:iczambrini@fc.ul.pt)),

see <https://sites.google.com/view/schromoka/positions>

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**Postdoctoral position (2 years) will be available starting Jan 2020 in the field of classical molecular dynamics simulations of proteins.**

The project is the collaboration between the theoretical group of Prof Matyushov at Arizona State University and the experimental group of Prof Fumagalli at University of Manchester. We want to study the dielectric response of water at the protein-water interface. The successful candidate will spend the first year in Arizona doing MD simulations of water at the surface of proteins and spend the second year at Manchester collaborating with the experimental team on interpreting

experimental results with simulations.  
From: Dmitry Matyushov <[dmatyus@asu.edu](mailto:dmatyus@asu.edu)>

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**2 postdoc positions, in the areas of statistical physics, Bayesian inference and machine learning, Aston University, UK**

First position will be on developing theoretical and numerical methods from statistical physics and Bayesian inference to optimise routing, containment strategies and operational parameters in optical networks.

<https://jobs.aston.ac.uk/Vacancy.aspx?ref=R190398>

Second position focuses on employing theoretical and numerical methods from statistical physics, Bayesian statistics and game theory to study the impact of selfish and localised decisions on congestion and routing optimisation.

<https://jobs.aston.ac.uk/Vacancy.aspx?ref=R190399>

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**Tenured Associate Professor position in Physics of Intelligence, University of Tokyo**

The Institute for Physics of Intelligence, School of Science of the University of Tokyo, invites applicants for one tenured associate professor who explores a new research frontier through integration of physics and artificial intelligence. A successful candidate forms an independent research group and is responsible for undergraduate and graduate education at the department of physics. The candidate should also make efforts for the development of the Institute: <http://www.phys.s.u-tokyo.ac.jp/en/lp/ipi/>.

[http://www.phys.s.u-tokyo.ac.jp/en/job\\_info/1566/](http://www.phys.s.u-tokyo.ac.jp/en/job_info/1566/)

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**PostDoc Position Equity Factors identification through non-Gaussian features extraction, Paris, France**

The number of "risk factors" today available is huge (400+) and expanding. From a purely statistical perspective, a number of questions have been raised and remain controversial: What is the effective number of factors? How is their risk rewarded? How significant are overfitting and in-sample biases? We open a postdoctoral Position within the CFM Econophysics

& Complex Systems group ([www.econophysiX.com](http://www.econophysiX.com)), under the supervision of M Benzaquen, co-supervised by S Ciliberti and JP Bouchaud. Exploring the Independent Component Analysis (ICA) methodology, we wish to find a robust protocol for factor identifications which would be sound from an economic perspective. A good background in statistical physics, data analysis and Python is advised.

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**Postdoctoral opening in theoretical biophysics, Virginia Tech, VA, United States**

The Biomaterials Theory Group led by Prof. Nadir Kaplan at Virginia Tech Department of Physics (Blacksburg, VA) invites applications for a postdoctoral position in theoretical biophysics with a focus on Hard and Soft Matter Interfaces in Biomineralized Systems.

The anticipated start date is Spring 2020 and is negotiable. The appointment will be initially for one year and may be extended for an additional year subject to performance

and availability of funding. Review of applications will begin on December 1, 2019 and continue until the position is filled. For details: <https://academicjobsonline.org/ajo/jobs/15373>

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Perimeter is currently accepting applications for The Simons Emmy Noether Fellows Program at Perimeter Institute, which enables outstanding theoretical physicists to pursue research at Perimeter while on leave from their faculty positions at their home institutions. The Simons Emmy Noether Fellowships are central to Perimeter's initiatives to support female physicists. Perimeter Institute promotes an inclusive, welcoming culture and a family-friendly workplace.

We hope you will share this information by:

Forwarding this email to those who may be interested

Printing and hanging the downloadable poster

Adding this key information to newsletters, blogs and intranets

Program and application information can be found at [perimeterinstitute.ca/emmynoether](http://perimeterinstitute.ca/emmynoether).

Deadline for applications is January 13, 2020.

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The School of Mathematics, University of Bristol, is advertising the following openings:

[Lecturer/Senior Lecturer/Reader in Pure Mathematics/Probability/Analysis/Dynamics](#)  
**(2 or more)**

While this time special emphasis is on Number Theory and {Ergodic Theory + Dynamical Systems} applications from other areas of Pure Mathematics, Probability, Dynamics or Analysis are also welcome.

Please also spread the word about openings in other areas of mathematical research, as follows.

[Lecturer/Senior Lecturer/Reader in Mathematical Physics](#)

[Lecturer/Senior Lecturer/Reader in Statistical Science](#)

[Lecturer/Senior Lecturer/Reader in Quantum Computing](#)

[Heilbronn Data Science Chair](#) (at reader or professor level)

**Closing date for applications to all these positions: 6 January 2020.**

[Bristol](#) is a very friendly and welcoming city and will remain so after the shock of Brexit. Please note that [in the 2016 referendum Bristol voted 62% for remain in the EU](#), one of the few highest percentages for remain among all major cities in the UK.

The [School of Mathematics](#) at the [University of Bristol](#) is a leading centre of mathematical research in the UK and worldwide. The quality of research here was recognised in a very strong result in the last nationwide research excellence survey -- [REF2014](#) -- placing the School overall 5<sup>th</sup> in the UK and 4<sup>th</sup> for Research Intensity among all departments/schools of mathematics at UK universities. (The next REF evaluation of research excellence of UK universities will happen in 2021.)

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### **Post-doctoral Assistant**

The Research Unit Mathematical Stochastics (MSTOCH) of the Institute of Statistics and Mathematical Methods in Economics, TU Wien, invites applications for a postdoctoral assistant in Probability. The contract is for 6 years.

Responsibilities: The successful candidate is expected to conduct a high quality research program in the fields of Probability Theory and Statistical Mechanics. The selection will be mainly based on the excellence of previous scientific achievements and on the quality of the scientific project. The candidate will be also expected to contribute to the teaching mission of the MSTOCH department, giving support to courses in the Bachelor and/or Master's programs.

Application Deadline: January 15, 2020

For further information about the position, please contact Prof. Dr. Fabio Toninelli, [fabio.toninelli@tuwien.ac.at](mailto:fabio.toninelli@tuwien.ac.at), future head of the MSTOCH research unit starting in March 2020.

Please send your application documents as a single PDF file via e-mail to [barbara.triebl-kraus@tuwien.ac.at](mailto:barbara.triebl-kraus@tuwien.ac.at) including a brief cover letter in the main body of the email and subject: Application for MSTOCH postdoc.

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**Post-doctoral level positions, The Simons Center for System Biology at the Institute for Advanced Study, Princeton, USA.**

Postdoctoral Members are typically appointed for three years. A small number of senior scientists can be accommodated on sabbatical leave. Research pursued at the Center is focused on developing general theoretical principles that are unique to living matter. Current faculty are Stanislas Leibler and Misha Tsodyks. Applications and requests for further information can be submitted to [csb@ias.edu](mailto:csb@ias.edu). The information about the Center can be found at <https://www.sns.ias.edu/csb>.

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**Research scientist position opening. CDISE, Skoltech, Moscow Russia**

Opening in the group of Prof. V.V. Palyulin at Skoltech for a research scientist position. The starting dates are expected to be in Jan-Mar 2020. I am looking for people with physics/mathematics/computer science background to work on machine learning and statistical physics/active matter. More details can be found in the section news at: <https://faculty.skoltech.ru/people/vladimirpalyulin/>. Applications/Inquiries should be directed to [V.Palyulin@skoltech.ru](mailto:V.Palyulin@skoltech.ru)

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**2 ERC-funded postdoc positions in Anne-Florence Bitbol's new group at EPFL, Switzerland, starting March 1st, 2020 or later:**

- 1- Statistical physics / stochastic processes applied to evolutionary biology. <https://recruiting.epfl.ch/Vacancies/1175/Description/2>
- 2- Computational biology: Sequence-function relationship in proteins. <https://recruiting.epfl.ch/Vacancies/1173/Description/2>

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**Call for interest - Professor in Physics (Sapienza University of Rome), Italy**

The Physics Department of Sapienza University of Rome invites applications for academic openings at the Associate and/or Full Professor level from any fields in Physics covered through a direct call procedure. The Department of Physics is seeking established scientists with an outstanding record of high impact research,

excellence and leadership. The successful candidate will be expected to actively contribute to the department's academic program, its strategy and governance. More details on the application procedure at <http://www.phys.uniroma1.it/fisica/node/9835> For issues related to this call please ONLY use the email address [directcalls.fisica@uniroma1.it](mailto:directcalls.fisica@uniroma1.it).

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The Quantitative Life Sciences (QLS) section of the Abdus Salam International Centre for Theoretical Physics (ICTP) seeks applications for a postdoctoral position starting summer/fall 2020 from outstanding young scientists of any nationality with a strong research record. The ICTP is a UNESCO Category 1 research institute supporting science and education in the developing world. It promotes worldwide initiatives for the career development of Women in Science.

The QLS section provides a unique international research environment for postdoctoral fellows with about 15 group members (faculty, postdocs, graduate students and visitors) an intense programme of workshops and conferences, close collaborations with local institutions (SISSA, ICGEB, Trieste University) and internationally renowned research institutions (ENS Paris, EPFL, IPhT, UCSD, NTNU, MPIPKS, Aalto University). The QLS section has expertise in a broad range of fields including statistical physics of information processing, information theory, statistical learning, reinforcement learning, ecology and evolution, biophysics, stochastic thermodynamics etc. Postdoctoral fellows are encouraged, and supported, to participate in activities in developing countries in order to promote the mission of the ICTP.

Candidates should have a background in theoretical physics (statistical physics), mathematics (probability, statistics), computer science, information theory, electrical engineering and/or related disciplines, and be able to carry out active, independent and multidisciplinary research in: \*Theoretical and Computational Neuroscience.

\*The take-home monthly salary will be 2,700 EUR. Benefits include health insurance, a contribution towards a pension plan, if available, or, financial compensation amounting to 10% of the salary, paid monthly, and special allowances for family members. The appointment will be for two years, renewable for periods of up to one year, for a maximum of four years.

Applications and expressions of interest are welcome. Applications should include a cover letter, an updated CV including the full list of publications, a statement of research interests, and two or more letters of recommendation. Applications must be submitted on-line at:

<https://e-applications.ictp.it/applicant/login/QP20>.

Incomplete applications will not be considered.

For additional enquiries, and expressions of interest, please contact:

[qls@ictp.it](mailto:qls@ictp.it)

Application deadline: January 15, 2020.

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The Ecole Normale Supérieure (ENS Paris) invites applications for a Junior Research Laplace chair in data science at the postdoctoral level, funded by CFM (Capital Fund Management) and the ENS. The chair is named after Pierre-Simon, marquis de Laplace, who between many accomplishments, was one of the early founders of statistical inference and data science.

More information on <https://data-ens.github.io/jobs/>

The Laplace chair aims at recruiting outstanding candidates in all areas of data sciences including machine learning, deep learning, theoretical statistics, optimization, signal processing, computer science, applied mathematics and statistical physics, or working on applications to other sciences such as physics, biology, medicine, social sciences or economics.

Appointments will be for two years with a possible extension for a third year. Salary is competitive and the positions are endowed with travel resources.

The successful candidate will carry out research in ENS. Applications should consist of a single file and be send before January 31th, 2020 by email to [laplacechair2020@gmail.com](mailto:laplacechair2020@gmail.com).

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Post-doctoral position in Probability at Ceremade, University Paris Dauphine.

The position is for two years. The expected starting date is September 2020, though a different date may be arranged.

The position is funded by my European project MALIG, whose aim is to develop a mathematical approach to the liquid-glass transition and related phenomena.

Main areas of research include interacting particle systems, bootstrap percolation cellular automata and glassy dynamics.

The successful candidate will also have the opportunity to collaborate with the probability group of University Roma Tre, in particular with Fabio Martinelli, a key member of the MALIG team.

The grant will provide substantial fundings to cover working periods in Rome.

There are no teaching duties associated to the position.

Candidates can contact me directly for any additional information.

Applications including a CV, a list of publications and a one-page description of research interests and experience should be sent directly to me at

[toninelli@ceremade.dauphine.fr](mailto:toninelli@ceremade.dauphine.fr)

Applicants should also arrange for up to three letters of recommendation to be sent to the same address.

The deadline for applications is Monday, 3rd February 2020.