Matteo Smerlak

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Born 7. Dec 1984, French Citizen

Married, 2 children

Theoretical physicist interested in evolutionary dynamics, black holes, economic inequalities, open source science, open source policy

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Current Positions

Max Planck Institute for Mathematics in the Sciences, Germany
Sofja Kovalevskaja Research Group Leader — 2017 - pres.

Waterloo Center for Innovation and Complexity, Canada
External Member — 2017 - pres.

Education

Academic education

Université d'Aix-Marseille, France
Ph.D. in Theoretical Physics (highest honours) — 2008 - 2011
Thesis: Divergences in Spinfoam Quantum Gravity (pdf)
Advisors: Carlo Rovelli and Vincent Rivasseau

Ecole normale supérieure, France — 2006 - 2007
Master 2 Theoretical Physics (highest honours)

Ecole normale supérieure de Lyon, France
Master 1 Physics (highest honours) — 2005 - 2006
Licence Physics (highest honours) — 2004 - 2005

Lycée Henri IV, France
"Classe préparatoire aux Grandes Ecoles" — 2002 - 2004

Complementary education

Santa Fe Institute, USA
Complex Systems Summer School — 2013

Previous Employment

Perimeter Institute for Theoretical Physics, Canada
Senior Postdoctoral Researcher — 2016 - 2017
Postdoctoral Researcher — 2013 - 2016

Max Planck Institute for Gravitational Physics, Germany
Junior Scientist — 2011 - 2013

Grants & Fellowships

Human Science Frontiers Program, France
Young Investigator Award ($1,350,000 shared over four teams) 2019 - 2022

Alexander von Humboldt Foundation, Germany
Sofja Kovalevskaja Award (€1,649,000) 2017 - 2022
German Research Chair at AIMS Cameroon (€560,000, declined) 2017

Riemann Center for Geometry and Physics, Germany
Riemann fellowship 2012

Ecole normale supérieure de Lyon, France
"Elève normalien" fellowship (nationwide competitive exam) 2004 - 2008

Ecole polytechnique, France
"Ingénieur polytechnicien" fellowship (nationwide competitive exam, declined) 2004

Teaching

Max Planck Institute for Mathematics in the Sciences, Germany
Lecturer: Evolutionary dynamics 2020

African Institute for Mathematics in the Sciences (Cameroon, Ghana)
Lecturer: Electromagnetism & relativity; Complex systems 2015 - 2017

Université d'Aix-Marseille, France
Teaching assistant: Mathematical methods for physicists; Wave optics 2009 - 2011

African Institute for Mathematics in the Sciences (South Africa)
Teaching assistant (full time) 2007 - 2008

Lycée Henri IV, France
Teaching assistant in France's first affirmative action post-secondary class 2006 - 2007

Supervision

Max Planck Institute for Mathematics in the Sciences, Germany
Cyrille Merleau Nono Saha (PhD) 2018 - pres.
Camila Bräutigam (master) 2018 - pres.

Perimeter Institute for Theoretical Physics, Canada
Samuel Leutheusser (undergrad) 2016
Tommaso de Lorenzo (undergrad) 2014

Service

Perimeter Institute for Theoretical Physics, Canada
Conference organizer: *Open Research: Rethinking Scientific Collaboration* 2017
Postdoc representative 2014 - 2015

Ecole normale supérieure de Lyon, France
Seminar coordinator 2005 - 2006

Publications

Peer-reviewed publications:

~40 published articles, ~1000 citations: see my Google Scholar profile for a complete list

Popular science book:

Les trous noirs, "Que Sais-Je?", Presses Universitaires de France, 2016 (link)

Translation of population science book:

Anaximandre de Milet ou la naissance de la science, Carlo Rovelli, Dunod, 2015 (link)

Chapters in popularization/philosophy books:

Gilbert Simondon ou l'invention du futur, Bontems ed., Klincksieck, 2016 (link)
Le monde quantique, d'Espagnat, Zwirn eds., Editions Matériologiques, 2014 (link)
Le plus grand des hasards, Surprises quantiques, Dars, Papillault eds., Belin, 2010 (link)

Magazine articles:

Comment les trous noirs ont pris corps, La Recherche 489, 2014 (link)
Le monde quantique, une question de perspective, with C. Rovelli, La Recherche 418, 2008 (link)

Talks

Invited plenary talks in international conferences (selection):

The (non-Gaussian) structure of fitness distributions, Population Dynamics And Statistical Physics In Synergy II, Pisa, 2019 (slides)
Statistical laws of Darwinian evolution, MPG Symposium, Max Planck Society, Berlin, 2017 (slides)
On black hole design, Loops '15, Friedrich-Alexander University, Erlangen, 2015 (slides)
Thermodynamics of economic inequalities: precariousness, volatility and stratification, Statistical Physics Methods in Social and Economic Systems, IHP, Paris, 2015

Invited external seminars (selection):

Flitness landscapes, from wave localisation towards evolutionary prediction, Institute for Theoretical Physics, Köln University, 2019 (slides)
Meat on the bones of Universal Darwinism (with help from R. Fisher), GeorgiaTech, 2018 (slides)
How do ecosystems grow? A surprising pattern, Institute for Systems Biology, Seattle, 2016 (slides)

Unpublished work

The Global Cooperative: A Blueprint for Managing the World's Collective Goods, with B. Vaitla (*pdf*)