

Davide Gerosa | Curriculum Vitae

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Relativistic astrophysicist and gravitational-wave astronomer, studying the impact of Einstein's general relativity on the astrophysical world. Research interests include astrophysical inference with gravitational-wave sources, black-hole binary spin dynamics, black-hole recoils, accretion disks and tests of general relativity.

Personal information

Present position: NASA Einstein Fellow.
*California Institute of Technology, TAPIR MC 350-17,
1200 E California Blvd, Pasadena, CA 91125, USA.*

Citizenship: Italy, EU.

Personal webpage: www.tapir.caltech.edu/~dgerosa

Research experience

California Institute of Technology **Pasadena CA, USA**
NASA Einstein Fellow *2016-now*

- *Support:* Einstein postdoctoral prize fellowship. Part of the NASA prize fellowship program, Einstein Fellowships are prestigious awards in theoretical astrophysics consisting of personal research grant at selected US institution. See cxc.cfa.harvard.edu/fellows.

University of Cambridge **Cambridge, UK**
Ph.D. candidate, Department of Applied Mathematics and Theoretical Physics *2013-2016*

- *Support:* Isaac Newton Studentship; STFC Ph.D. Studentship. The Isaac Newton Studentship is the only astronomy-specific Ph.D. scholarship of the University of Cambridge.
- *Supervisor:* Ulrich Sperhake.
- *Thesis:* Source modelling at the dawn of gravitational-wave astronomy. Resulted in 14 publications.

Extended research visits:

- Institut Astrophysique de Paris. Paris, France. *Jul 2015*
- University of Mississippi, Oxford MS, USA. *Aug-Dec 2012*
- Caltech, Pasadena CA, USA. LIGO Summer Undergraduate Research Fellow (SURF). *Jun-Aug 2012*

Education

Università degli Studi di Milano **Milan, Italy**
Master's degree in Astrophysics *2010-2013*

- *Final degree grade:* 110/110 with distinction ("cum laude").
- *Average class grade:* 30/30 with 7/12 distinctions ("cum laude"). Top 1% of my class.
- *Thesis advisors:* Giuseppe Lodato, Emanuele Berti. Thesis resulted in 2 publications.

Università degli Studi di Milano **Milan, Italy**
Bachelor's degree in Physics *2007-2010*

- *Final degree grade:* 110/110 with distinction ("cum laude").
- *Average class grade:* 29.84/30 with 18/26 distinctions ("cum laude"). Top 1% of my class.

Liceo Scientifico Statale Paolo Frisi **Monza MB, Italy**
Scientific High School degree *2002-2007*

- *Final grade:* 100/100.

Grants, scholarships and awards

Einstein Postdoctoral Prize Fellowship , NASA.	2016-now
Giulio Rampa Ph.D Thesis Prize , Italian Society for General Relativity and Gravitation.	2018
Stefano Braccini Ph.D Thesis Prize , Gravitational Wave International Committee.	2017
Isaac Newton Ph.D. Studentship , DAMTP & IoA, University of Cambridge.	2013-2016
STFC Ph.D. Studentship , UK Science & Technology Facilities Council.	2013-2016
Royal Astronomical Society Travel Grant , Royal Astronomical Society.	2016
Rouse Ball Studentship in Mathematics , Trinity College, University of Cambridge.	2015
Smith-Rayleigh-Knight Essay Prize , Faculty of Mathematics, University of Cambridge.	2015
LIGO Summer Undergraduate Research Fellowship , California Institute of Technology.	2012
Undergraduate Studentship , Physics Department, University of Milan.	2007-2008

Publications

Counts: 27 papers published in major peer-reviewed journals, 5 papers in submission stage, 4 other papers published in conference proceedings, software journals, etc, (out of which 18 first-authored papers and 3 papers covered by press releases).

Total number of citations: >1000 (using ADS and InSPIRE).

h-index: 16

Web links to list services: ADS; INSPIRE; ARXIV.

Full list of publications available at www.tapir.caltech.edu/~dgerosa/pub.

Presentations

Counts: 29 talks at conferences, 25 talks at department seminars, 7 posters at conferences, (out of which 38 invited presentations).

Full list of presentations available at www.tapir.caltech.edu/~dgerosa/talks.

Teaching and Mentoring

Ph.D. student projects:

- o R. Tso, Caltech. 2017-2018

Undergraduate student mentoring:

- o J. Vosmera, University of Cambridge. Summer project. 2015
- o B. Veronesi, University of Milan. Bachelor's thesis. 2015
- o R. Barbieri, University of Cambridge (visiting from University of Pavia). Summer project. 2016
- o K. Chamberlain, Caltech (visiting from Montana State University). Summer project. 2017
- o R. Barbieri, Caltech (visiting from University of Pavia). Master's thesis. 2018
- o L. Reali, University of Milan. Bachelor's thesis. 2018
- o A. Lima, Caltech (visiting from Bowdoin College). Summer project. 2018

Teaching assistant:

- o University of Cambridge, Part III General Relativity (master class). 2015-2016
- o University of Cambridge, Part II General Relativity (3rd-year undergraduate class). 2014-2016

Outreach and Service

Referee

- Physical Review Letters
- Physical Review D
- Science Advances
- The Astrophysical Journal
- Monthly Notices of the Royal Astronomical Society
- General Relativity and Gravitation
- Europhysics Letters
- European Physical Journal Plus

Grant proposal reviewer and panelist

- NASA Astrophysics Theory Program (ATP), USA;
- NASA Graduate Fellowship Program (NESSF), USA;
- STFC DiRAC HPC allocation proposals; UK.

Organized conferences

- *Numerical Relativity beyond General Relativity*, Benasque Science Center, Spain. 2018
- *APS Pacific Coast Gravity Meeting*, Caltech. 2018
- *The disc migration issue: from planets to black holes*, University of Cambridge. 2017
- *Einstein's Legacy: Celebrating 100 yrs of General Relativity*, Queen Mary University of London. 2015

Outreach activities

- TV Interview on gravitational waves and black-hole kicks aired on Cambridge TV. 2016
(see cambridge-tv.co.uk/davide-gerosa-black-holes).
- Actively involved in the Cambridge Science Festival, faculty of Mathematics. 2015
- Research coverage by the Caltech outreach journal: CURJ, Vol.15 No.1 (2014). 2014
- Scientific journalist for the Italian on-line newspaper *ilsussidiario.net*. since 2013
- Astronomy and relativity lectures to high-school students. since 2011

Professional recognition

- Italian Habilitation to Associate Professorship in Theoretical Physics 2018-2024
(Abilitazione Scientifica Nazionale, Settore 02/A2).

Academic Service

- Seminar organizer, TAPIR seminar series, Caltech. 2018-now
- Observer member, management committee of European COST Action grant "GWverse". 2017-now
- PhD representative, Gravitational Physics committee of the UK Institute of Physics. 2014-2016
- Undergraduate student representative, Science Faculty Council, University of Milan. 2008-2012

Code and data sharing

- *Developer* of open-source Python module `PRECESSION`, github.com/dgerosa/precession.
Toolbox to study the post-Newtonian dynamics of spinning black-hole binaries; used in 20+ papers.
- *Open source project*: `FILLTEX`, automatic LaTeX bibliography, github.com/dgerosa/filltex.
- *Research outputs*: public catalog of numerical-relativity waveform in scalar-tensor theory of gravity; black-hole binary evolution YouTube channel, open source software `SURRKICK`, `GWDET`, `SPOPS`.

Memberships

- LISA Consortium (associate member)
- American Physical Society (member)
- GWIC 3G Science case subcommittee
- Royal Astronomical Society (member)

Skills

Programming languages: Python (advanced), Bash, Mathematica, C, Fortran.

Other scientific tools: LIGO lalsuite, LaTeX, GIT, SVN, Gnuplot, SuperMongo. Supercomputer jobs.

Languages: English (fluent), Italian (native).

Hobbies

Alpinism, rock climbing, skiing. Climbed to the top of Monte Rosa, 2nd highest mountain in the Alps.

Avid soccer player (and FC Inter fan). Jogging, tennis and squash player.

Rock music, great fan of Bruce Springsteen.