

CURRICULUM VITAE – MAURA BRUNETTI

Born in Rome (Italy)
Citizen of Italy and Switzerland
Married, three children

Address:

Nonlinearity and Climate
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CURRENT POSITION

Aug 2023–present	Senior Lecturer (Maître d’Enseignement et de Recherche, 20%)
Jan 2014–present	Senior Research Scientist (Adjointe Scientifique 3, 80%) Group of Applied Physics & Institute for Environmental Sciences University of Geneva (Switzerland)

EDUCATION

Ph.D. in Physics	University of Pisa, Italy, June 2001 Research topic: Turbulence in plasma physics Thesis title: “ <i>Nonlinear coherent structures in collisionless plasmas</i> ” Advisors: Prof. Pegoraro and Dr. Califano
Laurea (M.Sc.) in Physics	University of Rome ‘La Sapienza’, Italy, May 1997 grade: 110/110 Master-Thesis title: “ <i>Tensorial and scalar gravitational waves emitted by binary systems and their interaction with spherical antennas</i> ” Advisors: Prof. Ferrari, Prof. Coccia and Dr. Fucito

EMPLOYMENTS

Sept 2011–Dec 2013	Research Scientist (Maître d’Enseignement et de Recherche suppléante) in the context of the CADMOS project Institute for Environmental Sciences, University of Geneva
March 2011–June 2011	Secondary school teacher in Physics, Geneva
Oct 2006–Nov 2010	Postdoctoral Research Fellow Geneva Observatory, University of Geneva Geneva (Switzerland)

Aug 2001–Aug 2006	Postdoctoral Research Fellow Plasma Physics Research Center (CRPP), EPFL Lausanne (Switzerland)
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GRANTS

2026-2030: PI of the SNSF-COST project **NET4TIP**: *Network Approaches to Climate Tipping Mechanisms*, funded by the Swiss National Science Foundation (SNSF) (400 kCHF)

1/10/2023-30/9/2027: co-PI of the Sinergia Project CRSII5_213539 **Base-Top-Earth**: *Long-term evolution of the Earth from the base of the mantle to the top of the atmosphere: Understanding the mechanisms leading to ‘greenhouse’ and ‘icehouse’ regimes*, funded by SNSF (2080 kCHF)

1/11/2018-31/10/2023: co-PI of the Sinergia Project CRSII5_180253 **PaleoC4**: *Quantifying decamillennial changes in carbon cycling, climatic and biotic responses to Late Permian-Early Triassic volcanism*, funded by SNSF (2674 kCHF).

1/9/2013-31/8/2015: Research partner for the R+D project INNOSUISSE 15574: *Use of global palaeo-DEM (Digital Elevation Models) for palaeo-climate modelling: tectonic/climate interaction for the past 600 million years*, funded by CTI (492 kCHF).

Sept 2011-Dec 2013: Grant from the CADMOS project, University of Geneva.

Oct 2006–Oct 2007: Marie Heim-Vögtlin Grant: *Structure and dynamics of spiral galaxies*, funded by SNSF (65 kCHF).

———— OTHER FUNDS

4/4/2025: CPU nodes on the UniGe Bamboo cluster, funded by the Informatics Committee (COINF) (6.9 kCHF)

19/3/2025: Accelerometer for the WIND2WAVES project, funded by INVEST-ISE (5.9 k€)

14/3/2024: CPU nodes on the UniGe Bamboo cluster, funded by COINF (7.5 kCHF)

7/3/2019: CPU nodes on the UniGe clusters, funded by COINF (37 kCHF)

Sep 1999: Research Fellowship, CINECA, Supercomputing Centre, Bologna, Italy.

———— SUPERVISION OF JUNIOR RESEARCHERS

- (Co)-advisor of **6 PhD students**: *Debbie Eeltink* (from rogue waves to filamentation in laser optics, Oct. 2019), *Alexis Gomel* (extreme events, Feb. 2023), *Charline Ragon* (paleoclimate, April 2024), *Siddharth Bhatnagar* (exoplanets, expected in 2026), *Laure Moinat* (climate dynamics, expected in 2027), *Niklas Werner* (paleoclimate, expected in 2027)

- (Co)-advisor of **9 Master students**: *Nadège Marchiando* (rogue waves, 2014), *Matteo Tomasini* (ocean-sea ice interactions, 2014), *Corentin Montessuit* (dispersive shock waves, 2021), *Siddharth Bhatnagar* (multistability in exoplanets, 2022), *Marine Leyvraz* (exoplanets, 2024), *Paz Lodi-fe* (topology of attractors, 2025), *Andrea Belli Contarini* (wind-waves interaction, 2025), *Thomas Lucet* (tipping cascades, expected in 2026), *Byeongseok Kang* (paleoclimate, expected in 2026)

- TP3 for students of the Physics Section (Group of Applied Physics, 2013-2022)

———— TEACHING ACTIVITIES

- *Nonlinear systems* (13P060CE, 12 hours) in collaboration with J. Kasparian, course at Master level in the Physics Section, since 2014.

- *Advanced climate modelling* (14E082, 14 hours) in collaboration with S. Goyette, optional course at Master level in the Physics Section and MUSE (*Master Universitaire en Sciences de l'environnement*), since 2013.

- *Introduction to meteorology and climatology* (14E161, 8 hours) in collaboration with S. Goyette, optional course at Master level at MUSE, since 2021.

- *Environnement alpin, atelier Climat-Glaciologie* (14E1452014), in collaboration with M. Perroud, first year MUSE, 2014-2017.

- *Atelier de mise en application des méthodes de recherche (séances sur Lecture critique d'articles et Présentation des graphiques)*, MUSE (14E171AT), 2013-2016

- *Atelier Enjeux, séance sur les enjeux climatiques*, MUSE (14E203AT), Fall 2016

———— LIST OF PUBLICATIONS: [Link to my web page](#)

———— LIST OF CONFERENCES: 1997–2016, 2017–present

———— PANELS AND EXPERTISE

- Member of the committee “Charges Enseignement des assistants” at the Physics Section, since September 2025

- Member of the Editorial Board of Physical Review E, since January 2025

- Member of the Management Committee of the COST Action CA23150 *pan-EUROpean Biogeodynamics network* (EUROBIG), since September 2024

- Member of **DinAmicI**, a group of Italian and adoptive Italian researchers in dynamical systems, since 2024

- Member of the scientific committee for the first 'Swiss Habitability and Origin of Life' (SHOL) days, March 19-20, 2024 in Bern

- Member of the Orientation Committee at ISE, University of Geneva (2015-2017)

- Member of the Research Committee at ISE, University of Geneva (2014-2019)
- Jury member for the following Ph.D. theses:
 - Benoit Frisquet* (University of Bourgogne, France) on ‘Ondes scélérates complexes dans les fibres optiques’ (March 2016);
 - Matthew Crabb* (Australian National University) on ‘Nonlinear wave patterns in the complex KdV and nonlinear Schrödinger equations’ (January 2022);
 - Guillaume Chaverot* (Geneva Observatory, UniGE) on ‘When planets get too hot: exploration of the runaway greenhouse with 1D and 3D climate models’ (September 2023);
 - Caterina Mosto* (Universidad de Buenos Aires, Argentina) on ‘Analysis and validation of climate simulations using topological techniques in nonlinear dynamics’ (September 2025).
- Scientific reviewing activity for: Ocean Modelling, Physics of Fluids, European Journal of Mechanics / B Fluids, Journal of Fluid Mechanics, Physical Review E, Journal of Climate, Geoscientific Model Development, Journal of Geophysical Research - Atmospheres.
- Expert for the Swiss National Competition of the Science and Youth Foundation in the Physics and Technology group, 2023 and 2025

OUTREACH ACTIVITIES

- ‘Détection de seuils critiques pour le climat grâce à la modélisation par réseaux’, talk given at the conference series ‘Énergie - environnement’, ISE, University of Geneva (May 8, 2025)
- Open-door activities in the Perle du lac park for the Science Night (‘La Nuit de la Science’), 2022
- ‘Comprendre le climat grâce aux simulations numériques’, talk given at the conference series ‘Modéliser le réel: un outil et un défi pour la science’, organised by culture&rencontre and University of Geneva, Collège de Saussure (January 29, 2020)
- ‘Etats d’équilibre et points de bascule dans le système climatique: exemple de la grande extinction du Permien-Trias’, talk given to celebrate 10 years of ISE (September 27, 2019)
- ‘Physique du climat et changements climatiques’: continuous learning course for secondary school teachers in Geneva (January 2015)
- Classroom visits in primary schools for discussing climate changes and presenting the UniGe DeepWater Plan-etSolar expedition (June 2013)
- Open-door activities at Geneva Observatory for the 450th anniversary of the University of Geneva and the International Year of Astronomy (March 2009)

CONTINUOUS LEARNING

- Tipping Point Modelling Intercomparison Project (TIPMIP), since 2023
- Comparison of Reference Exoplanet Models of Earth (CREME), part of the CUISINES exoplanet Modelling Intercomparison Projects (exoMIPs), since 2023
- December 8-10, 2021: LMDZ training course, LSCE, Paris (France)
- October 14-16, 2019: Workshop on ‘Response theory and its applications in geophysical fluid dynamics’, Institut Henri Poincaré, Paris (France)
- October 7-11, 2019: Workshop on ‘Nonlinear and stochastic methods in climate and geophysical fluid dynamics’, Institut Henri Poincaré, Paris (France)
- May 26-27, 2015: Workshop on ‘High-Order Spectral models’, LHEEA Lab, Ecole Centrale de Nantes, Nantes (France)
- February 2009: “VIIème Séminaire Transalpin de Physique”, Climate and Atmospheric Physics, Champex-Lac (Switzerland)
- March 2007: ‘The origin of the Galaxy and Local group’, 37th Saas-Fee advanced course of the Swiss Society for Astrophysics and Astronomy, Mürren (Switzerland)
- A.A. 2004-2005: ‘Infrastructures and energy’, organised by CUEPE, University of Geneva (Switzerland)
- February 2002: ‘MPI, Introduction à la programmation parallèle’, EPFL (Switzerland)
- September 1999: *8th Summer School of parallel computation*, CINECA, Bologna (Italy)
- July 1999: *36th Culham Plasma Physics Summer School*, Culham Science Center (UK)
- September 1997: *6th National Seminar of Theoretical Physics*, University of Parma (Italy)