

# CV of Michele Maggiore

(September 2018)



## Personal data.

Born Aug. 1, 1963. Italian and Swiss citizen. Married, three children.  
*michele.maggiore@unige.ch*  
<http://theory.physics.unige.ch/maggiore>

## Present position.

Full Professor at the Department of Theoretical Physics, University of Geneva.

## Education.

Master in Physics at the University of Pisa (March 1986). Grade 110/110 *e lode*.  
PhD in Physics at Scuola Normale Superiore, Pisa (March 1990). Grade 70/70 *e lode*.

## Academic trajectory.

- 1987-1989. PhD student at Scuola Normale Superiore, Pisa.
- January-October 1990. Postdoc at the Institute für Theoretische Physik, University of Bern.
- October 1990-October 1991. Postdoc at TPI, University of Minnesota, Minneapolis.
- Oct. 1991. Permanent position as INFN researcher at the Pisa section of INFN.
- September 1999-May 2000. Sabbatical year as Paid Scientific Associate at CERN, Theory Division.
- Apr. 2001-present: Full professor at the Department of Theoretical Physics, Physics Section, University of Geneva.  
July 2011-July 2017. Head of the Physics Section, University of Geneva.

## Research interests.

I am a theoretical physicist with a broad spectrum of interests. My original background is in quantum field theory. Since the mid 1990s my interests moved toward gravitational-wave physics, while in the last decade my original research has been mostly devoted to cosmology, dark energy, and modified gravity.

I am the author of 118 papers (see the link to InSPIRE from my homepage), plus a textbook on QFT, and a two-volume textbook on gravitational waves. Among the most significant publications I can mention:

- *M. Maggiore, "A Modern Introduction to Quantum Field Theory," Oxford University Press, 2005, 291 pages.* An introductory textbook on QFT for Master and PhD students, widely used in European and US Universities.
- *M. Maggiore, "Gravitational Waves. Vol. 1: Theory and Experiments," Oxford University Press, 2007, 554 pages.* A comprehensive textbook on the theory and experiments of GWs, widely considered as the reference textbook in the field.
- *M. Maggiore, "Gravitational Waves. Vol. 2: Astrophysics and Cosmology," Oxford University Press, 2018, 848 pages.* After 10 more years of work, I have recently completed the second volume, devoted to what we can learn from GWs in astrophysics and in cosmology. The book has published in March 2018.
- *M. Maggiore, "Gravitational wave experiments and early universe cosmology," Phys. Rept. 331 (2000) 283.* With currently about 560 citations in InSPIRE, it is a standard reference on stochastic backgrounds of GWs.

My full publication lists, as well as a broader selection of significant papers, can be obtained from my homepage. Beside purely theoretical work, with my group we have often interacted with experimental GW groups. In particular, in the early 1990s, when I still was in Pisa, I often collaborated with Virgo, and I have several publications with the collaboration. In the early 2000s we contributed to the data analysis for resonant-mass detectors. I am now core member of the LISA space interferometer, where I work within the Cosmology Working Group, and I contribute to the effort of defining the Science Case for the Einstein Telescope.

**Research group.** My group is currently composed by Stefano Foffa (permanent staff member), Enis Belgacem and Andreas Fincke (PhD students). Together with the groups of R. Durrer, A. Riotto, M. Kunz and C. Bonvin, we are part of the larger Geneva Cosmology Group, see <http://cosmology.unige.ch>.

I have been the supervisors of 17 PhD thesis. Among them, some notable former PhD students are Alessandra Buonanno (presently director of the Max Planck Institute for Gravitation, Potsdam), Alberto Nicolis (associate professor at Columbia University, NY), Stefano Foffa (staff at Geneva University), Riccardo Sturani (professor at the International Institute of Physics in Natal, Brazil) Giulia Cusin (currently postdoc at Oxford) and Yves Dirian (currently postdoc in Zürich).

**Administrative duties and outreach activities.** I have a significant experience in management, as well as in outreach activities. In particular:

- I served two terms (2011-2014 and 2014-2017) as President of the Physics Section of the University of Geneva. Among my duties, I was responsible for the academic and administrative direction of the Physics Section (which comprises four Departments), and I represented the Physics Section at the level of Faculty of Sciences. Upon consultation with the Board of Directors of our four Departments, I was responsible for the budget of the Section. I have been the President of the Committee that plans the scientific future of the Physics Section and the opening of permanent positions. As a member of the “Conseil Decanal”, I contributed to the management of the Faculty of Sciences. I also served as vice-President of the Physics Section for the terms 2005-2008 and 2008-2011. In 2002-2005 I served as president of the Committee which deals with all the issues concerning the teaching activity, and in this role I organized the transition to the so-called “Bologna system” (Bachelor+Master+PhD).

- I am one of the founders of the Center of Astroparticle Physics (CAP) at the University of Geneva, which brings together the competences in astro-particle physics and cosmology of the Department of Theoretical Physics, the Department of Nuclear and Particle Physics (both at the Physics Section) and the Department of Astronomy of Geneva University.

I am strongly engaged in activities for the general public and schools. In particular;

- I am the co-founder of the Athéna program, a program that allows students in the last two years of College in the Geneva Canton to follow a course in Physics or Mathematics at Geneva University for a semester, with the help of a tutor, and with the possibility of validating the exam and obtaining the corresponding credits (<http://unige.ch/sciences/programme-athena.html>). For this program, with A. Müller, we shared the 2016 Prize for Pedagogical Innovation of Geneva University.

- I have been member of the committee that steers the “PhysiScope”, an initiative of the Physics Section that performs physics demonstrations for school classes and for the general public.<sup>1</sup>

- I often give talks for the general public, and occasionally interviews in Swiss national newspapers, radio and TV on scientific subjects. The recordings of some talks for general public, or some TV or radio broadcasts are still available from my homepage, <http://theory.physics.unige.ch/maggiore>

---

<sup>1</sup>The PhysiScope is a remarkably successful initiative for communicating with the general public and contributing to developing the passion for Science in children and young people. Since its creation in 2008, over 25'000 visitors have come to the Physics Section to participate at our physics shows, with demonstrations performed daily for the whole year. The main target are students of schools of the Geneva canton, of all ages. In the last few years the PhysiScope has also obtained a significant notoriety at the European level, and is regularly receiving classes from abroad. We have also prepared a series of 60 TV shows in collaboration with the national channel RTS2, aimed at children about 8-years old.