

Curriculum vitae

PERSONAL INFORMATION

Family name, First name: Liguori, Michele

ORCID: 0000-0002-0383-2254

Date of birth: 08/05/1978

Nationality: Italian

• EDUCATION

- 2006** PhD
Department of Physics, University of Padova, Italy
Supervisor: Prof. Sabino Matarrese
- 2002** Master (110/110 cum laude)
Department of Physics, University of Padova, Italy

• CURRENT POSITION

- 2022** Visiting Professor. Department of Physics, University of Trento
- 2020** Professor ("Professore di seconda fascia")
Department of Physics and Astronomy, University of Padova, Italy

• PREVIOUS POSITIONS

- 2011 – 2019** Lecturer
Department of Physics and Astronomy, University of Padova, Italy
- 2010 – 2011** Post-doctoral fellow
Institut d'Astrophysique de Paris (IAP). Paris. France.
- 2006 – 2010** Post-doctoral fellow
Department of Applied Mathematics and Theoretical Physics (DAMTP).
University of Cambridge. United Kingdom.

• FELLOWSHIPS

- 2005 – 2006** Pre-doctoral Brinson Fellow in the Fermilab Theoretical Astrophysics group.
Fermilab, Illinois (USA).

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

- 2013 – present** Supervisor of 5 PhD students, at University of Padova (Sarah Libanore; Giampaolo Benevento, Filippo Oppizzi, Dionysis Karagiannis; Giampaolo Benevento). Co-

supervisor of 2 PhD students (Andrea Ravenni, University of Padova, Alessandro Renzi. SISSA. Trieste, Italy).

2012 – present Supervisor of 8 Master thesis projects and 12 short projects for at the Department of Physics and Astronomy, University of Padova.

- **TEACHING ACTIVITIES**

2019-present Holding the course Astrostatistics and Cosmology, University of Padova, Italy

2012 - present Adjunct Professor – General Physics I (Principles of Classical Mechanics, Fluid Dynamics and Thermo Dynamics). University of Padova, Italy.

2014 - present Teaching a course in "Radiative Processes in Cosmology and Astrophysics" for graduate students in Physics and Astronomy. University of Padova, Italy.

June 2018. Series of lectures in "The polarization of the Cosmic Microwave Background", at the PhD school "Looking at Cosmic Sources in Polarized Light". Asiago (Italia), (<https://www2.pd.infn.it/astro/pers/asiago2018/>).

Sept. 2013 Series of lectures in "Observational Probes of Early Universe Cosmology" at the "PhD school Francesco Lucchin". Gaeta. Italy.

2010. Series of 3 lectures in "Statistical estimation of primordial non-Gaussianity in Cosmology" for graduate students at DAMTP, University of Cambridge (UK)

- **ORGANISATION OF SCIENTIFIC MEETINGS**

2017 Member of the steering committee of "UniVersum": series of annual meetings of the Italian cosmological community (<http://www.jb.man.ac.uk/~scamera/universum/>).

2013 Local organizer of CosmoClassic meeting. Padova, Italy (<https://sites.google.com/a/g.harvard.edu/cosmoclassic/>).

2008 Conference "Non-Gaussianity from Fundamental Physics", DAMTP, Cambridge, UK. Member of Local Organizing Committee (<http://www.damtp.cam.ac.uk/research/gr/workshops/NG/2008/home.html>)

- **INSTITUTIONAL RESPONSIBILITIES**

2022 Visiting professor at the Department of Physics, University of Trento, Italy.

2020 Professor, Department of Physics and Astronomy, University of Padova, Italy.

2016 Member of the "Data Science" Departmental Committee. Department of Physics and Astronomy, University of Padova. Italy.

2011 – present Lecturer, Department of Physics and Astronomy, University of Padova. Padova. Italy.

2011 – present Graduate Student Advisor. University of Padova. Italy.

2006-2007 Organizer of a weekly series of General Relativity seminars in DAMTP, University of Cambridge (UK).^{[1][2][3]}

- **COMMISSIONS OF TRUST**

2006 – present Regular reviewer for the main scientific Journals in the field of Astrophysics and Cosmology: Physical Review D, Monthly Notes of the Royal Astronomical Society, Astrophysical Journal, JCAP, Physical Review Letters, Astronomy and Astrophysics.

2018. Member of the selection committee for admission to the PhD program in Physics, University of Padova.

2016. Reviewer for 2011-2014 VQR (“Evaluation of the Quality of Research”, involving Italian universities, research agencies and consortia). ^[1]_{SEP}

- **MAJOR COLLABORATIONS**

- Strongly involved in the ESA *Planck* satellite experiment: Planck associate, starting 2003. *Planck Scientist*, starting 2011. Member of the *Planck* LFI data analysis core team, starting 2008. Member of the Planck HFI data analysis Core Team from 2010 to 2015.
- Member of ESA Euclid collaboration (participating in the activities of the primordial non-Gaussianity and CMB-LSS cross-correlation working groups), starting 2007. ^[1]_{SEP}
- Member of the eLISA gravitational wave observatory collaboration (participating in the activities of the Gravitational Waves and Cosmology working group), starting 2013. ^[1]_{SEP}
- Member of the ASKAP/EMU collaboration, starting 2016. ^[1]_{SEP}
- Member of the European proposal team for a future CMB M5 ESA mission. Coordinator of science activities for primordial non-Gaussian studies, 2016.
- Member of the "Cosmoclassic" network (<https://sites.google.com/a/g.harvard.edu/cosmoclassic/>).
Cosmoclassic is a collaborative project between several leading Cosmology centers in Europe: Institute of Cosmological Science, (Barcelona), University of Padova (Italy), Institut d'Astrophysique de Paris and Institut Lagrange de Paris, IFIC and Canfranc Laboratory (Valencia). Cosmoclassic activities involve exchange of students and postdocs, frequent organization of meetings at one of the different home institutions, collaborative scientific projects.

- **PUBLICATION SUMMARY.**

190 refereed publications in international refereed journals in the years 2003-2018. Total 55626 citations, h-index 86 (January 2022). Metrics from SAO/NASA Astrophysics Data System (ADS).

- **INVITED TALKS**

- Workshop "Cosmogold IAP 2019". Paris (France). June 2019. Invited talk: "Challenges in constraining non-Gaussianity from CMB and LSS experiments".
- Workshop "Concordances and Challenges in Cosmology after Planck". Sesto Pusteria (Italy). February 2019. Invited talk: "Testing Primordial non-Gaussianity. Planck and Beyond".
- Workshop "Beyond General Relativity, Beyond Cosmological Standard Model". Warsaw (Poland). July 2019. Invited talk: "Testing Primordial non-Gaussianity. Perspectives beyond Planck".
- Workshop "From Dark Energy to Bright Sinergies". Sesto Pusteria (Italy). July 2018. Invited talk: "Primordial non-Gaussianity and Large Scale Structure".

- Workshop "Venice Cosmology Workshop". Venezia (Italy) . Giugno 2018. Invited talk and convener for the session: "The future of CMB Cosmology".
- Workshop "Probing Fundamental Physics with CMB Spectral Distortions". CERN, Geneve (Switzerland). March 2018. Invited talk: "Testing primordial trispectra and f_{NL} scale dependence with CMB spectral distortions".
- Conference "Dark Energy and Modified Gravity Cosmologies (DARKMOD)". Paris (France). September 2017. Invited talk: "CMB constraints on K-mouflage models".
- Workshop "Quantum Vacuum and Gravitation". Mainz (Germany). April 2016. Invited talk: "Testing primordial non-Gaussianity with CMB and LSS data".
- International GGI workshop "Theoretical Cosmology in the Era of Large Surveys". Arcetri, Firenze (Italy). April 2016. Invited talk: "Testing Inflation with CMB and LSS" ^[1]_[SEP]
- Conference "Marcel Grossmann meeting, XIV". University "La Sapienza", Roma, (Italy), July 2015. Invited talk "Primordial non-Gaussianity and beyond power spectrum statistics: Planck results and their implications" ^[1]_[SEP]
- Conference "30th Institut d'Astrophysique Paris colloquium, The primordial Universe after Planck". Institut d'Astrophysique. Paris (France). December 2014. Invited talk: "Non-Gaussianities via the modal estimator" ^[1]_[SEP]
- Conference "Rencontres du Vietnam, Cosmology in the Planck Era.", Quy Nhon (Vietnam), July 2013. Invited talk: "Planck constraints on primordial non-Gaussianity" ^[1]_[SEP]
- Workshop "Critical Tests of Inflation using Non-Gaussianity", Max-Planck- Institut für Astrophysik, Garching (Germany), November 2012. Invited talk "CMB bispectrum measurements and foreground contamination" ^[1]_[SEP]
- Workshop "PPC 2011: Vth international workshop on the interconnection between particle Physics and Cosmology", CERN (Switzerland), June 2013. Invited talk "What could we learn from high-order statistics/non-gaussianity in the CMB?" ^[1]_[SEP]
- Workshop "Cosmological Non-Gaussianity: Observations Confront Theory", University of Michigan, Ann Arbor, (USA), May 2011. Invited talk "A Modal Estimator for the CMB Bispectrum" ^[1]_[SEP]
- Workshop "The Almost Gaussian Universe", Institut de Physique Théorique, CEA/Saclay (France), June 2010. Invited talk "A general mode-expansion for CMB bispectrum estimation" ^[1]_[SEP]
- SISSA; Trieste (Italy) November 2007. Invited talk "Planck and primordial non-Gaussianity" ^[1]_[SEP]
- Queen Mary College; London (UK) November 2007. Invited talk "Planck and primordial non-Gaussianity"
- Department of Astronomy, University of Sussex; Brighton (UK) May 2007. Invited talk "Can cosmological perturbations grow without dark matter?" ^[1]_[SEP]
- Planck meeting; Orsay (France) February 2007. Talk "Generation of non- Gaussian maps of the Cosmic Microwave Background" ^[1]_[SEP]
- Workshop "Astroparticle and cosmology"; Firenze (Italy), November 2006. Invited talk: "Testing Gaussianity of Primordial Cosmological Perturbations in CMB Anisotropies" ^[1]_[SEP]

- **NATIONAL AND INTERNATIONAL GRANTS**

2019-2022 PI of a funded PRIN grant ("Progetti di ricerca interesse nazionale", "Research projects of national interest") from the Italian Ministry of Education, University and Research (MIUR). Title: "Combining Cosmic Microwave Background and Large Scale Structure Data. An Integrated Approach for Addressing Fundamental Questions in Cosmology". Total budget: 464000 Euros.

2018-2020. Supporting TAlent in ReSearch@University of Padova" (STARS) Consolidator Grant (<http://www.unipd.it/en/stars>) Principal Investigator of research grant "Cosmology beyond Gaussianity: statistical Inference, Theoretical modeling and Observations". Budget: 140000 Euros.

- **PRIZES AND AWARDS**

2018. 2018 Gruber prize in Cosmology, Planck Team.

2018. 2018 Royal Astronomical society Group Achievement award 'A' Planck Team.

2014. SIGRAV (Italian Society for General Relativity and Gravitation) prize for "Astrophysics, Cosmology and Experimental Gravity".

2005. Fermilab Brinson pre-doctoral fellowship.

Trento, 6/12/2022

