

# MICHELE LIGUORI

## Curriculum Vitae et Studiorum

**Date of birth:** May 8th, 1978  
**Place of birth:** Brescia–Italy  
**Present position:** Lecturer at the Department of Astronomy and Astrophysics,  
University of Padova  
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### Employment

**Starting December 2011.** Lecturer at the Department of Physics and Astronomy, University of Padova.

**November 2010–November 2011.** Post-doctoral fellowship at the Institut d’Astrophysique de Paris (IAP).

**October 2006–October 2010.** Post-doctoral fellowship at the Department of Applied Mathematics and Theoretical Physics (DAMTP), University of Cambridge.

**March–September 2006.** Post-doctoral fellowship at the Astronomical Observatory of Padova, concerning “*Simulation of temperature and polarization CMB maps*”.

### Education

**2006, March 8th.** Ph.D. awarded from the University of Padova. Thesis title: “*The Cosmic Microwave Background as a test of the Physics of the Early Universe*”. Advisor: Prof. Sabino Matarrese.

**2005.** Brinson Fellow in the Theoretical Astrophysics Group at Fermi National Accelerator Laboratory (Fermilab), Batavia, Illinois (USA).

**2003.** PhD student at the University of Padova, Department of Physics. Advisor: prof. Sabino Matarrese.

**May–December 2003.** Post-graduate Fellowship at the Astronomical Observatory of Padova, concerning *Generation of maps of the Cosmic Microwave Background at the angular resolution of Planck satellite for a study of anisotropies and polarization*.

**2002, March 27th.** Degree (*cum laude*) in Physics at the University of Padova, with the thesis: *Generazione di mappe non gaussiane del fondo cosmico di microonde* “*Generation of Non-Gaussian maps of the Cosmic Microwave Background*”), Advisors: Prof. S. Matarrese and Dr. L. Moscardini, University of Padova.

**1997.** Diploma of scientific studies (60/60) at Scientific High School A.Calini (Brescia-Italy).

### Talks, meetings and conferences.

1. 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”
2. 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?”
3. Workshop “Cosmological Non-Gaussianity: Observations Confront Theory”, University of Michigan, Ann Arbor, (USA), May 2011. Invited talk “A Modal Estimator for the CMB Bispectrum”
4. Workshop “The Almost Gaussian Universe”, Institut de Physique Thorique, CEA/Saclay (France), June 2010. Invited talk “A general mode-expansion for CMB bispectrum estimation”
5. Organizer of a weekly series of General Relativity seminars in DAMTP, years 2006-2007
6. Organizer of the workshop “Non-Gaussianity from Fundamental Physics”, held at DAMTP (Cambridge) from 8 to 10 September 2008
7. Workshop “Non-Gaussianity from Fundamental Physics”; Cambridge (UK), September 2008. Talk “Measuring  $f_{NL}$  with Planck”
8. Department of Physics, University of Padova; Padova (Italy) November 2007. Invited talk “Planck and primordial non-Gaussianity”
9. SISSA; Trieste (Italy) November 2007. Invited talk “Planck and primordial non-Gaussianity”
10. Queen Mary College; London (UK) November 2007. Invited talk “Planck and primordial non-Gaussianity”
11. Department of Astronomy, University of Sussex; Brighton (UK) May 2007. Invited talk “Can cosmological perturbations grow without dark matter?”
12. Planck meeting; Orsay (France) February 2007. Talk “Generation of non-Gaussian maps of the Cosmic Microwave Background”

13. Workshop “Astroparticle and cosmology”; Firenze (Italy), November 2006. Invited talk: “Testing Gaussianity of Primordial Cosmological Perturbations in CMB Anisotropies”
14. Planck LFI meeting. Bologna (Italy), November 2006. Talk “Non-Gaussian CMB maps at Planck angular resolution”.
15. Workshop “Non-Gaussianity from Inflation”; Cambridge (England), April 2006; poster: *Testing Primordial non-Gaussianity in CMB Anisotropies*
16. First meeting of INFN “Iniziativa specifica PD51”; May 2002; talk: *Generation of non-Gaussian CMB maps*.

**Research interests.**

Cosmic Microwave Background, Modified Gravity Models, Observational Tests of Cosmology.

**Areas of expertise:**

**Theory.** Linear theory of cosmological perturbations; CMB anisotropies and polarization; gravitational lensing.

**Observations and software.** Fortran programming, Monte Carlo simulations of CMB maps, statistical analysis of CMB datasets and related software tools and algorithms (CMBfast, HEALPix, Monte Carlo Markov Chains).

**Languages.** English, Italian