

Curriculum Vitae - Marco Raveri

CONTACT INFORMATION	209 South 33rd Street Center for Particle Cosmology University of Pennsylvania Department of Physics and Astronomy Philadelphia, PA 19104	<i>E-mail:</i> mraveri@sas.upenn.edu <i>Website:</i> marcoraveri.com
CURRENT POSITION	University of Pennsylvania, Center for Particle Cosmology Postdoctoral researcher	Sept 2019 - Present
PREVIOUS POSITIONS	University of Chicago, KICP Postdoctoral researcher Leiden University, Instituut-Lorentz Visiting researcher	Sept 2016 - Sept 2019 June 2016 - Sept 2016
RESEARCH INTERESTS	Dark Energy and Gravity phenomenology. Statistical and computational methods for cosmology. Observational cosmology and forecasting. Gravitational wave cosmology. Cosmological signatures of Dark Matter and neutrinos.	
EDUCATION	Ph.D. in Astrophysics, SISSA/ISAS International School for Advanced Studies <i>Dissertation: The Threefold Way to Cosmological Tests of Gravity</i> <i>Advisors:</i> Carlo Baccigalupi (SISSA), Alessandra Silvestri (Instituut-Lorentz) Master in High Performance Computing, SISSA/ISAS International School for Advanced Studies and ICTP - Abdus Salam International Centre for Theoretical Physics <i>Dissertation: Computational Challenges in Cosmological Tests of Gravity</i> <i>Advisors:</i> Luca Heltai (SISSA), Carlo Baccigalupi, Alessandra Silvestri Master Degree in Physics, University of Padua <i>Dissertation: General Relativistic Effects in Large Scale Structure Formation</i> <i>Advisors:</i> Sabino Matarrese, Nicola Bartolo (UNIPD)	June 2016 Dec 2016 July 2012
PROFESSIONAL ACTIVITIES	<ul style="list-style-type: none">• Member of the CMB-S4 collaboration• Member of the Dark Energy Survey (DES) collaboration• Member of the Dark Energy Science Collaboration (DESC)• Member of the EUCLID collaboration• Organizing Committee for the Cosmic Controversies conference at the University of Chicago• Co-Organizer of yearly EFTCAMB developers meetings• Member of the KICP Friday seminar series committee• Member of the Topics Editorial Board of Galaxies• Referee for Physical Review Letters (PRL), Physical Review D (PRD), Journal of Cosmology and Astroparticle Physics (JCAP), Physics of the Dark Universe, The Astrophysical Journal, Monthly Notices of the Royal Astronomical Society (MNRAS).• KICP representative in the University of Chicago postdoc committee	2016-present 2018-present 2018-present 2015-2018 2019 2016-present 2018 2020-present

OPEN-SOURCE **EFTCAMB** (eftcamb.org), cosmology of Dark Energy and Gravity models.
 CODES DEVELOPED **CosmicFish** (cosmicfish.github.io), cosmological forecasting.
Tensiometer (github.com/mraveri/tensiometer), tools for tensions detection.

MENTORED STUDENTS

- Matteo Rizzato, University of Padova master student
PhD Paris Institute of Astrophysics, now postdoc at Leiden University (1 paper)
- Simone Peirone, University of Trieste/SISSA master student
PhD Instituut Lorentz (6 papers)
- Prakrut Chaubal, University of Trieste/SISSA master student
now graduate student at University of Melbourne
- Timothy Hoffman, University of Chicago graduate student (1 paper)
- Juan Espejo, Instituut Lorentz master student
now graduate student at Swinburne University of Technology (1 paper)
- Giampaolo Benevento, University of Padova graduate student
now postdoc at Johns Hopkins University (3 papers)
- Meng-Xiang Lin, University of Chicago graduate student (3 papers)
- Georgios Zacharegkas, University of Chicago graduate student (1 paper)
- Shivam Pandey, University of Pennsylvania graduate student (1 paper)
- Alice Garoffolo, Instituut Lorentz graduate student (1 paper)
- Minsu Park, University of Pennsylvania graduate student

TEACHING EXPERIENCE

- Guest lecture for the advanced Cosmology course
at the University of Chicago on Dark Energy phenomenology Fall 2018
- Guest lectures for the Cosmology course
at the University of Pennsylvania on CMB physics Fall 2019
- EFTCAMB coding tutorials for master and graduate students 2016 - present
- Tutorial on Bayesian statistical inference
for the Penn Undergraduate Data Science Hangout 2020

HONORS AND AWARDS

- CITA Canada fellowship (declined) 2018
awarded by the Canadian Institute for Theoretical Astrophysics
- SISSA Ph.D. fellowship 2012

OUTREACH AND SERVICE

- Adler Planetarium Astronomy Conversations Fall 2018 - Fall 2019
- Lifelong Learning Senior Citizen Public Lectures Fall 2016 - Fall 2019
- Invited public lecture at the Chester County Astronomical Society Spring 2020

SELECTED PUBLICATIONS

(* alphabetical order of all or part of the authors indicates equal contribution)

1. * Alice Garoffolo, **Marco Raveri**, Alessandra Silvestri, Gianmassimo Tasinato, Carmelita Carbone, Daniele Bertacca, Sabino Matarrese
“Detecting Dark Energy Fluctuations with Gravitational Waves”,
 arXiv:2007.13722
2. * Carles Sánchez, **Marco Raveri**, Alex Alarcon, Gary M. Bernstein
“Propagating sample variance uncertainties in redshift calibration: simulations, theory and application to the COSMOS2015 data”,
 Mon. Not. Roy. Astron. Soc. **498**, no.2, 2984-2999 (2020) arXiv:2004.09542
3. * Shivam Pandey, **Marco Raveri**, Bhuvnesh Jain
“Model independent comparison of supernova and strong lensing cosmography: Implications for the Hubble constant tension”,
 Phys. Rev. D **102**, no.2, 023505 (2020) arXiv:1912.04325

4. **Marco Raveri**
“Reconstructing Gravity on Cosmological Scales”,
 Phys. Rev. D **101**, no.8, 083524 (2020) arXiv:1902.01366
5. **Marco Raveri**, Wayne Hu, Savdeep Sethi
“Swampland Conjectures and Late-Time Cosmology”,
 Phys. Rev. D **99**, no. 8, 083518 (2019) arXiv:1812.10448.
6. **Marco Raveri**, Wayne Hu,
“Concordance and Discordance in Cosmology”,
 Phys. Rev. D **99**, no. 4, 043506 (2019) arXiv:1806.04649.
7. Gong-Bo Zhao, **Marco Raveri**, *et al.*,
“Dynamical dark energy in light of the latest observations”,
 Nature Astronomy **1**, no. 9, 627 (2017) arXiv:1701.08165.
8. **Marco Raveri**,
“Are cosmological data sets consistent with each other within the Λ cold dark matter model?”,
 Phys. Rev. D **93**, no. 4, 043522 (2016) arXiv:1510.00688.
9. **Marco Raveri**, Carlo Baccigalupi, Alessandra Silvestri, Shuang-Yong Zhou,
“Measuring the speed of cosmological gravitational waves”,
 Phys. Rev. D **91**, no. 6, 061501 (2015) arXiv:1405.7974.
10. **Marco Raveri**, Bin Hu, Noemi Frusciante, Alessandra Silvestri,
“Effective Field Theory of Cosmic Acceleration: constraining dark energy with CMB data”,
 Phys. Rev. D **90**, no. 4, 043513 (2014) arXiv:1405.1022.

ACADEMIC
REFERENCES

Bhuvnesh Jain, Walter H. and Leonore C. Annenberg Professor,
 Department of Physics and Astronomy,
 Center for Particle-Cosmology, University of Pennsylvania,
 209 South 33rd Street, Philadelphia, PA 19104 (USA).
 e-mail: bjain@physics.upenn.edu, Office: 4N12A, Phone: +1 215 573 5330.

Wayne Hu, Horace B. Horton Professor, Department of Astronomy and Astrophysics,
 KICP, Enrico Fermi Institute, University of Chicago,
 5640 South Ellis Avenue, Chicago, IL 60637 (USA).
 e-mail: whu@background.uchicago.edu, Office: 439, Phone: +1 773 702 0160,
 Homepage: <http://background.uchicago.edu/~whu/>.

Alessandra Silvestri, Associate Professor,
 Instituut Lorentz for Theoretical Physics, Leiden University,
 Niels Bohrweg 2, Leiden, NL-2333 CA, (Netherlands).
 e-mail: silvestri@lorentz.leidenuniv.nl, Office: 270, Phone: +31 71 527 5540,
 Homepage: <http://wwwhome.lorentz.leidenuniv.nl/~silvestri/>.

Carlo Baccigalupi, Professor, Astrophysics Sector,
 SISSA/ISAS International School for Advanced Studies,
 Via Bonomea 265, 34136, Trieste (Italy).
 e-mail: bacci@sisssa.it, Office: 506, Phone: +39 040 3787 475,
 Homepage: <https://sites.google.com/view/carlobaccigalupi>.

Levon Pogosian, Professor, Dept. of Physics
 Simon Fraser University,
 8888 University Drive, Burnaby, BC, V5A 1S6 (Canada).
 e-mail: levon@sfu.ca, Phone: +1 (778) 782 7598,
 Homepage: <http://www.sfu.ca/~levon>.

Sabino Matarrese, Professor, Dept. of Physics and Astronomy,
The University of Padua,
Via Marzolo 8, 35131, Padova (Italy).
e-mail: sabino.matarrese@unipd.it, Phone: +39 049 8277 120.

Luca Heltai, Associate Professor, Mathematics Sector,
SISSA/ISAS International School for Advanced Studies,
Via Bonomea 265, 34136, Trieste (Italy).
e-mail: luca.heltai@sissa.it, Phone: +39 040 3787 449,
Homepage: <http://people.sissa.it/~heltai/>.

INVITED TALKS AND
SEMINARS
(SELECTED)

27. Speaker, Cosmology from Home
“*Learning Gravity from Cosmological Data*”, Aug 2020;
26. Colloquium Speaker, Theoretical Astrophysics Program
University of Arizona, Tucson, (Arizona)
“*Is the standard cosmological model in crisis?*”, Oct 2019;
25. Invited Speaker, Simons Summer Workshop:
Cosmology and String Theory, Stony Brook, (New York)
“*Phenomenology of late time cosmic acceleration*”, (video), July 2019;
24. Seminar at CITA, Toronto (Canada)
“*Physical models to explain the Hubble constant tension*”, May 2019;
23. Concordances and challenges in cosmology after Planck, Sexten (Italy)
“*Discordant Cosmology: implications for Dark Energy models and gravitational theories*”, Feb 2019;
22. Testing Gravity 2019, Vancouver (Canada)
“*Reconstructing gravity on cosmological scales*”, Jan 2019;
21. Seminar at the University of Michigan, Ann Arbor (Michigan)
“*Concordance Cosmology and beyond*”, Nov 2018;
20. Princeton University and Institute for Advanced Study CosmoLunch and Bahcall
Lunch, Princeton (New Jersey)
“*Concordance Cosmology (?)*”, Nov 2018;
19. Seminar at the University of Pennsylvania, Philadelphia (Pennsylvania)
“*Cartography of the Dark Side of the Universe*”, Nov 2018;
18. Seminar at the Institute for Nuclear and Particle Astrophysics (INPA), Berkeley
(California)
“*Concordance Cosmology and beyond*”, Nov 2018;
17. Seminar at the University of Illinois Urbana-Champaign, (Illinois)
“*Concordance Cosmology and beyond*”, Oct 2018;
16. The Future of H₀: Crisis or Concordance workshop, Chicago, (Illinois)
“*Concordance and Discordance In Cosmology*”, Oct 2018;
15. CASTLE workshop, Tagliolo, (Italy)
“*Concordance and Discordance In Cosmology*”, Sept 2018;
14. Joint SPT-DES Analysis workshop, Chicago, (Illinois)
“*Testing the Concordance of Cosmological Observations*”, Jun 2018;
13. Plenary Talk, CMB-S4 collaboration meeting, Chicago, (Illinois)
“*CMB-S4, Dark Energy and Gravity*”, Sept 2016;

12. Theoretical Cosmology in the Era of Large Surveys, Galileo Galilei Institute workshop, Florence, (Italy),
“Efficient exploration of Modified Gravity models in the era of Large Surveys”,
“Testing the Concordance of Cosmological Observations”, Apr 2016;
11. Seminar at the Max-Planck-Institut für Astrophysik (MPA), Garching, (Germany),
“The Threefold Way to Cosmological Tests of Gravity”, Jan 2016;
10. Seminar at the Instituut-Lorentz for theoretical physics, Leiden (Netherlands),
“The EFTCAMB Einstein-Boltzmann solver”, Nov 2015;
9. Seminar at the Institute for Theoretical Physics at the University of Heidelberg, Heidelberg (Germany)
“The Effective Field Theory approach to gravitation on cosmological scales”, Nov 2015;
8. Seminar at the Institute for Nuclear and Particle Astrophysics (INPA), Berkeley (California)
“The Effective Field Theory approach to gravitation on cosmological scales”, Oct 2015;
7. Seminar at the Stanford Institute for Theoretical Physics (SITP), Stanford (California)
“The Effective Field Theory approach to gravitation on cosmological scales”, Oct 2015;
6. Seminar at the Institute for Strings, Cosmology and Astroparticle Physics (ISCAP), New York (New York)
“The Effective Field Theory approach to gravitation on cosmological scales”, Oct 2015;
5. Seminar at the University of Pennsylvania, Philadelphia (Pennsylvania)
“The Effective Field Theory approach to gravitation on cosmological scales”, Oct 2015;
4. COSMO-15, Warsaw (Poland),
 contributed talk: *“The Effective Field Theory approach to modified gravity phenomenology”*, Sept 2015;
3. Euclid Consortium meeting, Lausanne (Switzerland),
 contributed talk: *“Computation of CMB-LSS cross correlation spectra in EFT Cosmologies”*, June 2015;
2. Seminars at NAOC: National Astronomical Observatories, Chinese Academy of Sciences, Beijing (China),
“The Effective Field Theory Approach to Dark Energy Phenomenology”,
“Measuring the speed of cosmological gravitational waves”, May 2015;
1. Invited lecturer to Virtual Institute of Astroparticle Physics,
“Measuring the speed of cosmological gravitational waves”, (video), June 2014;