

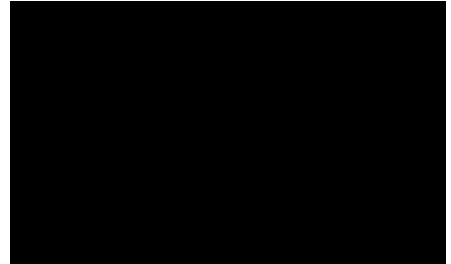
Carlo Baccigalupi

# Curriculum Vitae



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Visiting JAXA laboratories in Tsukuba, Japan,  
Spring 2019



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## Personal Information and Contact Details

- [REDACTED]
- [REDACTED]

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## Academic Positions

- **2021-now:** member of the Data Science PhD group at SISSA
- **2018-now:** vice-coordinator of the Astrophysics & Cosmology PhD group at SISSA
- **2016-2018:** coordinator of the Astrophysics & Cosmology PhD group at SISSA
- **2014-present:** full professor at within the Astrophysics & Cosmology Group at SISSA
- **2006-2016:** associate professor within the Astrophysics & Cosmology Group at SISSA

- **2005-2006:** Mercator Visiting Professor for the German Science Foundation in the Institute for Theoretical Astrophysics in Heidelberg, Germany
  - **2002-2005:** tenure track within the Astrophysics Sector at SISSA,
  - **2002-2009:** long term visitor, few months per year, at the Lawrence Berkeley National Laboratory, California, USA
  - **1999-2002:** post-doc within the Astrophysics Sector at SISSA
  - **1998:** visiting PhD Student (supported for 2 months), Theoretical Astrophysics Group, Theoretical Astrophysics, Fermilab, USA
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## Education

- **1999:** PhD Degree on Fundamental Physics and Cosmological Backgrounds of Radiation, [REDACTED], University of Ferrara, Italy
  - **1995:** Master Degree *cum laude* on Theory and Observations of inflationary bubbles, [REDACTED], University of Pisa, [REDACTED], [REDACTED], Astronomical Observatory in Rome
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## Research Interests

- Fundamental Interactions
  - General Relativity
  - Quantum Field Theory
- Cosmology
  - Early Universe
  - Cosmic Microwave Background
  - Large Scale Structure

- Dark Energy & Matter
  - Data Analysis
    - Bayesian methods
    - Neural Networks
  - My main achievements are available [here](#).
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## Awards

- **2019**: Cocconi Prize to the Planck and WMAP Experiments: [eps-hepp.web.cern.ch/eps-hepp/PrizeAnnouncements/XMhep2019/EPS\\_Cocconi2019\\_long.pdf](https://eps-hepp.web.cern.ch/eps-hepp/PrizeAnnouncements/XMhep2019/EPS_Cocconi2019_long.pdf)
  - **2018**: “Dipartimenti di Eccellenza” Grant by the Italian Ministry of University and Research to the Physics Area at SISSA for the construction of a Data Science group in the Physics area: [www.sissa.it/news/departments-excellence-according-miur-clean-swe-ep-sissa-0](http://www.sissa.it/news/departments-excellence-according-miur-clean-swe-ep-sissa-0)
  - **2018**: Gruber Prize for Cosmology 2018 to the Planck Scientists in the Planck Collaboration: [gruber.yale.edu/planck-scientists](http://gruber.yale.edu/planck-scientists)
  - **2005**: Mercator Professorship by the German Science Foundation
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## Outreach

I have given a number of public conferences and lectures at elementary, middle and high schools. More details can be found on my website here: <https://sites.google.com/view/carlobaccigalupi/outreach/communication-of-science?authuser=0>

A list of scientific communications is also available on the SISSA website here:

<https://www.sissa.it/it/search/node/Baccigalupi>

I have also written and published several articles concerning society. More details can be found on my website here:

<https://sites.google.com/view/carlobaccigalupi/outreach/society?authuser=0>

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## Institutional Responsibilities

- **2021 – now:** [referee for the National Scientific Abilitation](#) for the Italian Ministry of University and Research
  - **2018 – now:** member of the Steering Committee of the [Institute for Fundamental Physics of the Universe](#), managed by the ICTP, INAF, INFN and SISSA, Trieste, Italy
  - **2018 – now:** vice-Coordinator of the [Astrophysics and Cosmology Group](#) at SISSA
  - **2018 – 2020:** member of the Data Science Committee at SISSA responsible for hirings based on the “Dipartimenti di Eccellenza” project, funded by the Italian Ministry of University and Research, 6.5 M€, for the implementation of a [Data Science Group at SISSA](#)
  - **2015 – 2018:** coordinator of the [Astrophysics and Cosmology Group](#) at SISSA
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## Project Management

- **2021-now:** Co-I & Node Coordinator of the CMB-INFLATE Network within the European Union Horizon 2020 Marie Curie Programme (H2020-MCSA-RISE-2020) under the grant agreement 101007633.

- **2020-now:** Co-I & Node Coordinator of the [LiteBIRD](#) network funded by the Italian Space Agency for Participation to the Phase A of the preparatory work of the LiteBIRD satellite mission.
  - **2016-2021:** Co-I and Node Coordinator of the [COSMOS](#) network funded by the Italian Space Agency for Participation to Experiments concerning the Cosmic Microwave Background
  - **2015-2018:** Team Member of the [RadioForegrounds](#) Network within the European Union Horizon 2020 Research and Innovation Programme (COMPET-05-2015) under the grant agreement 687312
  - **2004 – 2009:** Co-I of the Funded Project, NASA Long Term Space Astrophysics program (LTSA), [REDACTED]
  - **2003 – 2006:** Co-I and Node Coordinator of the Project [Studi di Cosmologia e Fisica Fondamentale](#), funded by the Italian Space Agency
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## International Collaborations

- **2015-now:** Management Board member of the PolarBear/Simons Array ([bolo.berkeley.edu/polarbear](http://bolo.berkeley.edu/polarbear)) CMB experiment
- **2015-now:** coordinator of the Working Group on Cross-Correlation with CMB for the [Euclid](#) satellite mission
- **2016-now:** leader of SISSA as Member Institution of the Simons Observatory ([simonsobservatory.org](http://simonsobservatory.org)) CMB experiment
- **2016-now:** convener of the Foreground Joint Study Group of the LiteBIRD Satellite mission ([litebird.jp](http://litebird.jp))
- **2017-now:** Co-I of the [LSPE](#) CMB experiment
- **2018-now:** member of the Publications & Talk Panel in the CMB-S4 collaboration ([cmb-s4.org](http://cmb-s4.org))
- **2009-2017:** coordinator of the [Planck](#) Working Group on Component Separation (2012-2017), and of Component Separation paper

projects for the first (2013) and second (2015) release of data; Planck Scientist (**2012-2017**)

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## Supervision of graduate students and post-doctoral researchers<sup>1</sup>

- **Post-Supervision First Permanent Academic Positions:**
  - [REDACTED], PhD in 2006, Professorship at the College of Technology in New York, USA, in 2012,
  - [REDACTED], PhD in 2016, Researcher Position at the Aosta Astronomical Observatory in 2016,
  - [REDACTED], PhD in 2010, Researcher Position at the University of Milan in 2019,
  - [REDACTED], PhD in 2015, Lecturer at the CEA, Saclay, France in 2016.
- **2019 - now.** 1 Researcher ([REDACTED]), 3 Post-Docs ([REDACTED]), 7 PhD Students ([REDACTED]), Astrophysics and Cosmology, Data Science Groups, SISSA Italy, 1 Master Student, co-supervision with IISER, Pune, India
- **2005 - 2019:** 9 PostDocs, Astrophysics and Cosmology, Astroparticle Groups, SISSA, Italy
- **2004 - 2019.** 15 PhD Students, Astrophysics and Cosmology, Astroparticle Groups, SISSA, Italy
- **2012 - 2015.** 1 PhD student, Department of Physics, University of Naples Federico II, Italy
- **2010 - 2012.** 1 Master student, Department of Physics, University of Naples Federico II, Italy

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<sup>1</sup> PhD Thesis of PhD students at SISSA can be found at [www.sissa.it/ap/phdsection/alumni.php](http://www.sissa.it/ap/phdsection/alumni.php)



- **2007.** 1 Master Student, Department of Physics, University of Milan, Italy
  - **2003 - 2006.** 1 PhD student, Department of Physics, University of Rome La Sapienza, Italy
  - **2006.** 1 Master Student, Department of Physics, University of Trieste, Italy
  - **2004.** 1 Master Student, Department of Physics, University of Trieste, Italy
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## Teaching

- **2003 - now.** Teacher of the PhD course on Linear Cosmological Perturbation Theory and Cosmic Microwave Background anisotropies, SISSA, Trieste, Italy
  - **2005 - 2006.** Teacher of the Master Degree course Physics of the Early Universe, Institute for Theoretical Astrophysics, University of Heidelberg, Germany
  - **2002 - 2003.** Teacher of the Master Degree course on Cosmic Microwave Background Anisotropies, University of Pisa, Italy
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## Activities as Editor

1. **1999 - now.** Reviewer for papers in the following Journals: Astronomy & Astrophysics, Classical & Quantum Gravity, IEEE, Signal Processing Magazine, Journal of Physics A,, Montly Notices of the Royal Astronomical Society,, Montly Notices of the Royal Astronomical Society Letters, Physical Review D, Physical Review Letters, Physics Letters B
2. **2013.** Editor for the proceedings of the conference Big Bang, Big Data, Big Computers, 2013, <http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=165>, PoS

3. **2005**. Editor for the Journal on Applied Signal Processing, [mts.hindawi.com/asp](http://mts.hindawi.com/asp), special issue on Applications of Signal Processing in Astrophysics
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## Activities as Reviewer

4. **2006 - now**. Examiner for PhD Thesis Defences, SISSA, Trieste, Italy
5. **2006 - now**. Member of the Hiring Committee for Post-Doctoral Researchers, SISSA, Trieste, Italy
6. **2020**. Examiner for PhD Thesis Defences, IAP, Paris, France
7. **2017, 2019, 2020**. Member of the Hiring Committee for Researchers & Tenure Tracks, University of Rome La Sapienza, Italy
8. **2018, 2019**. Member of the Hiring Committee for Researchers & Tenure Tracks, University of Milano Bicocca, Italy
9. **2017**. Examiner for PhD Thesis Defence, University of Oslo, Norway
10. **2017**. Examiner for PhD Thesis Defence, IAP, Paris, France
11. **2017**. Member of the Hiring Committee for Researchers, University of Rome La Sapienza, Italy
12. **2017**. Member of the Hiring Committee for Researchers, SISSA, Trieste, Italy
13. **2017**. Member of the Hiring Committee for Researchers, University of Rome Tor Vergata, Italy
14. **2016**. Member of the Hiring Committee for Researchers, Italian Space Agency, Rome, Italy
15. **2015**. Examiner for PhD Thesis Defence, APC, Paris, France
16. **2015**. Examiner for PhD Thesis Defence, University of Milan, Italy
17. **2014**. Examiner for PhD Thesis Defence, University of Rome la Sapienza, Italy

18. **2006.** Examiner for PhD Thesis Defence, University of Helsinki, Finland
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## Organization of International Conferences

1. **2021:** Cosmology 2021, <https://indico.cern.ch/event/850500/>, Duino Castle, Trieste, Italy
2. **2019:** Fundamental Physics with Future CMB Probes, about 50 participants, <https://indico.sissa.it/event/42/overview>, IFPU, Trieste, Italy
3. **2019:** International Conference entitled **Coordination of the European CMB Programme**, about 100 participants, [indico.in2p3.fr/event/19414/overview](http://indico.in2p3.fr/event/19414/overview), APC, Paris, France
4. **2018:** International Workshop on Data Science, about 50 participants, [www.sissa.it/news/data-science-workshop](http://www.sissa.it/news/data-science-workshop), SISSA, Trieste, Italy
5. **2017:** International Conference entitled **Sailing through the Wonders of Astrobiology**, about 50 participants, [ecsac.ictp.it/ecsac17](http://ecsac.ictp.it/ecsac17), ECSAC, Lussino, Croatia
6. **2016: ADASSXXVI** International Conference, about 300 participants, [www.adass2016.inaf.it](http://www.adass2016.inaf.it), Stazione Marittima, Trieste, Italy
7. **2015:** International Conference entitled **From Inflation to Galaxies, a Workshop in Honour of [REDACTED]**, about 50 participants, [sabinomatarrese.weebly.com](http://sabinomatarrese.weebly.com), Livorno, Italy
8. **2013:** International Conference entitled **Cross-Correlating Cosmic Fields**, about 100 participants, [www.sea-astronomia.es/shanghai-conference-cross-correlating-cosmic-fields](http://www.sea-astronomia.es/shanghai-conference-cross-correlating-cosmic-fields), CAA, Jiao Tong University, and SHAO, Shanghai, China
9. **2013:** International Conference entitled **New Light on Cosmology from CMB**, about 200 participants, [indico.ictp.it/event/a12197](http://indico.ictp.it/event/a12197), ICTP, Trieste, Italy

10. **2012:** International Conference entitled **Big Bang, Big Data, Big Computers**, about 100 participants, [www.apc.univ-paris7.fr/APC\\_CS/Conferences/Workshop\\_Big3/Home.html](http://www.apc.univ-paris7.fr/APC_CS/Conferences/Workshop_Big3/Home.html), APC, Paris, France
  11. **2011:** International Conference entitled **Investigating Dark Energy at Large Scales (IDEALS)**, about 50 participants, <https://www.sissa.it/ap/events/ideals/about.htm> SISSA, Trieste, Italy
  12. **2009:** Convener for European Physical Society Conference, session on **Cosmology and GWs**, about 100 participants, [hep2009.ifj.edu.pl](http://hep2009.ifj.edu.pl), Jagiellonian University of Krakow, Poland
  13. **2006:** International Conference entitled **Astroparticle and Cosmology**, about 100 participants, <https://www.ggi.infn.it/showevent.pl?id=6>, GGI, Florence, Italy
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## Invitations to International Conferences and Schools

1. **August 2021: Invited Participant** at the **Gruber 2020 Cosmology Ceremony**, <https://gruber.yale.edu/2021-gruber-cosmology-prize>, taking place in remote because of the Covid-19 pandemic.
2. **May 2021: Invited Key Participant**, International Workshop entitled **The Accelerating Universe, the Physics and Astrophysics of Dark Energy and Gravitation**, [www.munich-iapp.de/accelerating-universe](http://www.munich-iapp.de/accelerating-universe), MIAPP, Munich, Germany.
3. **January 2021: Invited Participant** at the **Gruber 2020 Cosmology Ceremony**, <https://gruber.yale.edu/2020-gruber-cosmology-prize>, taking place in remote because of the Covid-19 pandemic.
4. **June 2020:** invited Participant at the meeting of the **Simons Observatory and Large Scale Structure Observations**, taking place in remote because of the Covid-19 pandemic.

5. **February 2020: Invited Speaker** at the annual national meeting of the Euclid Collaboration, <https://indico.ict.inaf.it/event/981/>, INAF-Bologna, Italy
6. **July 2019: Invited Speaker** at the **LiteBIRD International Symposium**, <http://litebird.isas.jaxa.jp/wiki/?LiteBIRD+kick-off+symposium>, ISAS, Machida, Japan.
7. **April 2019: Invited Convener** of the UniVersum National Workshop, <docs.google.com/document/d/12v1PtwXESbyeYFQU1wxoMoC5fD1Zy-FsfcAWh2levXg/edit>, University of Milan, Italy.
8. **February 2019: Invited Speaker** at the International Conference entitled **Concordances and Challenges in Cosmology after Planck**, [www.sexten-cfa.eu/event/concordances-and-challenges-in-cosmology-after-planck](http://www.sexten-cfa.eu/event/concordances-and-challenges-in-cosmology-after-planck), Sexten Center for Astrophysics, Sesto, Bolzano, Italy.
9. **February 2019: Invited Speaker** at the **Euclid and Beyond** national workshop, [indico.ict.inaf.it/event/745](http://indico.ict.inaf.it/event/745), CNR, Rome, Italy.
10. **January 2019: Invited Speaker** at the **International Conference** entitled **CMB & Large Scale Structure of the Universe**, [www.nicolavittorio.eu/CMB-and-LSS-meeting](http://www.nicolavittorio.eu/CMB-and-LSS-meeting), Villa Mondragone, Frascati, Rome, Italy.
11. **December 2018: Invited Speaker** at the **International Workshop** entitled **Future Work with Planck Data**, [www.cosmos.esa.int/web/fwpd/home](http://www.cosmos.esa.int/web/fwpd/home), ESAC, VillaFranca de Castillo, Madrid, Spain.
12. **October 2018: Invited Speaker**, **International Conference** entitled **Cosmology 2018**, [indico.cern.ch/event/736594/overview](http://indico.cern.ch/event/736594/overview), Dubrovnik, Croatia.
13. **September 2018: Invited Speaker** at the **International Workshop** entitled **Towards Coordination of European CMB Programme**, [indico.in2p3.fr/event/17625](http://indico.in2p3.fr/event/17625), Villa Finaly, Italy.

14. **July 2018: Invited Speaker** at the **International Conference** entitled **Fifteen Marcel Grossman Meeting, MG15**, [www.icra.it/mg/mg15](http://www.icra.it/mg/mg15), University of Rome La Sapienza, Italy.
15. **June 2018: Invited Speaker** at the **Euclid Consortium Annual Meeting**, [euclid2018.astro.uni-bonn.de](http://euclid2018.astro.uni-bonn.de), Argelander Institute for Astronomy, Bonn, Germany.
16. **June 2018: Invited Speaker** at the **ASI-COSMOS International Meeting** entitled **Astroparticle & Fundamental Physics with the CMB**, [agenda.infn.it/event/15622/?ovw=True](http://agenda.infn.it/event/15622/?ovw=True), University of Ferrara, Italy.
17. **December 2017: Invited Speaker** at the **International Workshop** entitled **B-Mode from Space**, [sites.google.com/berkeley.edu/bmodefromspace02/home?authuser=0](http://sites.google.com/berkeley.edu/bmodefromspace02/home?authuser=0), University of Berkeley, California, USA.
18. **November 2017: Invited Speaker** at the **International Workshop** entitled **CMB Foregrounds**, [cmbworkshop2017.ucsd.edu](http://cmbworkshop2017.ucsd.edu), University of San Diego, California, USA.
19. **October 2017: Invited Speaker** at the **International Conference** entitled **Post-Planck Cosmology: Enigmas, Challenges and Visions**, [www.iucaa.in/ws/~cosmoecv2017/index.html](http://www.iucaa.in/ws/~cosmoecv2017/index.html), IUCAA, Pune, India.
20. **July 2017: Invited Speaker** at the **International Conference** entitled **Probing the Spacetime Fabric: from Theory to Phenomenology**, [www.sissa.it/app/stf17](http://www.sissa.it/app/stf17), SISSA, Trieste, Italy.
21. **July 2016: Invited Speaker** at the **European Week of Astronomy and Space Sciences**, [eas.unige.ch//EWASS2016/session.jsp?id=S2](http://eas.unige.ch//EWASS2016/session.jsp?id=S2), Athens, Greece.
22. **May 2016: Invited Speaker** at the **First Korea-Italy Bilateral Symposium** entitled **CMB Science and Cosmology**, [www.kas.org/eng/view/community/viewnotice.jsp?no=162](http://www.kas.org/eng/view/community/viewnotice.jsp?no=162), University of Sejong, South Korea.

23. **March - May 2016: Invited Speaker** at the **International Workshop** entitled **Theoretical Cosmology in the era of Large Surveys**, [www.ggi.infn.it/showevent.pl?id=210](http://www.ggi.infn.it/showevent.pl?id=210), GGI, Florence, Italy.
24. **September 2015: Invited Speaker** at the **International Workshop** entitled **Cosmic Polarization Rotation: from Galilean Principles to Cosmology**, [www.arcetri.astro.it/cpr](http://www.arcetri.astro.it/cpr), Arcetri, Florence, Italy.
25. **July 2015: Invited Speaker** at the **International Conference** entitled **Fourteen Marcel Grossman Meeting, MG14**, [www.icra.it/mg/mg14](http://www.icra.it/mg/mg14), University of Rome La Sapienza, Italy.
26. **June 2015: Invited Speaker** at the **European Week for Astronomy and Space Sciences**, [eas.unige.ch/EWASS2015/session.jsp?id=Sp10](http://eas.unige.ch/EWASS2015/session.jsp?id=Sp10), University of La Laguna, Tenerife, Spain.
27. **May 2015: Invited Speaker** at the **IV International Workshop** entitled **Challenge of new Physics in Space**, [vichallenges.if.ufrj.br](http://vichallenges.if.ufrj.br), San Paulo, Brazil.
28. **April-May 2015: Invited Speaker** at the **International Conference** entitled **The Next Detectors for Gravitational Wave Astronomy**, [www.kitpc.ac.cn](http://www.kitpc.ac.cn), Kavli Institute for Theoretical Physics, Beijing, China.
29. **February 2015: Invited Speaker** at the **International Conference** entitled **B-mode Cosmology**, [research.kek.jp/people/hkodama/UTQuestWS4/program.html](http://research.kek.jp/people/hkodama/UTQuestWS4/program.html), KEK, Tsukuba, Japan.
30. **October 2014: Invited Speaker** at the **International Workshop** entitled **Multiple Messengers and Challenges in Astroparticle Physics**, [www.gssi.it/communication/announcements/item/167](http://www.gssi.it/communication/announcements/item/167), GSSI, L'Aquila, Italy.
31. **August-September 2014: Invited Speaker** at the **International Conference** entitled **Cosmology after Planck**, [www.munich-iapp.de/application/cosmology-after-planck](http://www.munich-iapp.de/application/cosmology-after-planck), MIAPP, Munich, Germany.

32. **June 2014: Invited Lecturer at the Fourth Next PhD School on Physics and Astronomy**, [indico.cern.ch/event/320137](http://indico.cern.ch/event/320137), University of Southampton, UK.
33. **April 2014: Invited Speaker at the CosKasi International Conference**, [cosmology.kasi.re.kr/conf2014/program.html](http://cosmology.kasi.re.kr/conf2014/program.html), Korean Astronomy and Space Science Institute, Daejeon, South Korea.
34. **December 2013: Invited Lecturer at the TRR33 Winter School in Cosmology**, [www.thphys.uni-heidelberg.de/~trr33/winterschool](http://www.thphys.uni-heidelberg.de/~trr33/winterschool), Passo del Tonale, Trento, Italy.
35. **September 2013: Invited Speaker at the National Conference of the Italian Society for Physics**, [www.sif.it/attivita/congresso/xcix](http://www.sif.it/attivita/congresso/xcix), Stazione Marittima, Trieste, Italy.
36. **September 2013: Invited Lecturer at the National School Francesco Lucchin**, [www.oa-roma.inaf.it/ScuolaLucchin2013](http://www.oa-roma.inaf.it/ScuolaLucchin2013), Gaeta, Naples, Italy.
37. **August-September 2013: Invited Speaker at the International Conference entitled New Frontiers in Physics**, [indico.cern.ch/event/198153/overview](http://indico.cern.ch/event/198153/overview), Crete, Greece.
38. **June-July 2013: invited Lecturer at the International School of the Italian Society of Physics entitled New Horizons for Observational Cosmology**, Varenna, Como, Italy.
39. **April 2013: Invited Speaker at the 47<sup>th</sup> ESLAB Symposium entitled The Universe as seen by Planck**, [www.cosmos.esa.int/web/planck/47th-eslab-programme](http://www.cosmos.esa.int/web/planck/47th-eslab-programme), Noordwijk, The Netherlands.
40. **April 2013: Invited Speaker at the International Conference entitled Observations and Theoretical Challenges in Modern Cosmology**, [online.kitp.ucsb.edu/online/primocosmo-c13](http://online.kitp.ucsb.edu/online/primocosmo-c13), Kavli Institute in Santa Barbara, California, USA.
41. **October 2011: Invited Speaker at the International Conference entitled The Dark Universe**, Heidelberg, Germany. [www.uni-heidelberg.de/presse/news2011/pm20110927\\_universum\\_en.html](http://www.uni-heidelberg.de/presse/news2011/pm20110927_universum_en.html).



42. **May 2011: Invited Lecturer** at the **National Astrophysics School** entitled **Dark Energy Probes, Dynamical Evolution of Globular Clusters**, [sites.google.com/site/boastroschool](http://sites.google.com/site/boastroschool), Bertinoro, Bologna, Italy.
43. **January 2011: Invited Speaker** at the **International Conference** entitled **The millimeter and sub-millimeter sky in the Planck mission era**, [sci.esa.int/planck/47677-the-millimeter-and-sub-millimeter-sky-in-the-planck-mission-era](http://sci.esa.int/planck/47677-the-millimeter-and-sub-millimeter-sky-in-the-planck-mission-era), City of Science and Industry, Paris, France.
44. **September 2010: Invited Speaker** at the **8th International Workshop** entitled **Science with the New Generation of High Energy Gamma-ray Experiments Gamma-ray Astrophysics in the Multimessenger context**, [scineghe2010.ts.infn.it/allegati/Scineghe2010\\_Circular2.pdf](http://scineghe2010.ts.infn.it/allegati/Scineghe2010_Circular2.pdf), 8th, INFN, Trieste, Italy.
45. **July 2010: Invited Speaker** at the **International Workshop** entitled **Interconnections between Particle Physics and Cosmology**, [www.ppc10.to.infn.it/program.php?d=4](http://www.ppc10.to.infn.it/program.php?d=4), Turin National University Library, Italy.
46. **May 2010: Invited Speaker** at the **National SAIT Workshop**, Pisa University, Italy.
47. **July 2009: Convener** for the **Cosmology and GWs** session at the **European Physical Society Conference**, [hep2009.ifj.edu.pl](http://hep2009.ifj.edu.pl), Jagiellonian University in Karkow, Poland.
48. **June 2009: Invited Speaker** at the **International Conference** entitled **CMB Polarization Workshop: Theory and Observations**, [cmbpol.uchicago.edu/workshops.html](http://cmbpol.uchicago.edu/workshops.html), Fermilab, Chicago, USA.
49. **April 2008: Invited Speaker** at the **CosmoTools International Workshop**, [www.lam.fr/anciennes-pages-d-equipe/cosmologie/article/evenement-s?lang=en](http://www.lam.fr/anciennes-pages-d-equipe/cosmologie/article/evenement-s?lang=en), Laboratory of Astrophysics in Marseilles, Marseilles, France.

50. **March 2008: Invited Speakers** at the **International Conference** entitled **Field Theory and Cosmology**, [nbia.nbi.ku.dk/calendar/past/workshops](http://nbia.nbi.ku.dk/calendar/past/workshops), Niels Bohr Institute, Copenhagen, Denmark.
51. **August 2007: Invited Speaker** at the **International Conference** entitled **Time and Matter 2007**, [tam.ung.si/2007](http://tam.ung.si/2007) , Bled Castle, Slovenia.
52. **July 2007: Invited Speaker** at the **International Conference** entitled **Cosmology and Strings**, [indico.ictp.it/event/a06206](http://indico.ictp.it/event/a06206), ICTP, Trieste, Italy.
53. **April 2007: Invited Speaker** at the **National Workshop** entitled **Incontri di Fisica delle Alte Energie**, [https://www.tib.eu/en/search/id/TIBKAT%3A539013757/IFAE-2007-Incontri-di-Fisica-delle-Alte-Energie/?tx\\_tibsearch\\_search%5Bsearchspace%5D=tn](https://www.tib.eu/en/search/id/TIBKAT%3A539013757/IFAE-2007-Incontri-di-Fisica-delle-Alte-Energie/?tx_tibsearch_search%5Bsearchspace%5D=tn), University of Napoli, Italy.
54. **April 2006: Invited Speaker** at the **International Conference** entitled **CMB and Physics of the Early Universe**, [pos.sissa.it/027](http://pos.sissa.it/027), Ischia, Italy.
55. **April 2005: Invited Speaker** at the **International Conference** entitled **Cosmic Connections: Matter-antimatter asymmetry, dark matter, and dark energy: are they related?**, [https://www.nsf.gov/awardsearch/showAward?AWD\\_ID=0516845](https://www.nsf.gov/awardsearch/showAward?AWD_ID=0516845), Quarrata, Italy.
56. **January 2005: Invited Speaker** at the **International Workshop** entitled **Planck Joint Consortium Meeting**, MPA, Garching, Germany.
57. **January 2004: Invited Speaker** at the **International Conference** entitled **Planck Symposium**, Orsay, France.
58. **April 2003: Invited Speaker** at the **SAIT National Workshop**, University of Trieste, Italy.
59. **March 2003: Invited Speaker** at the **International Conference** entitled **Cosmic Microwave Background and Its Polarization**,

[www.ftpi.umn.edu/workshops/2002-2003/CMB\\_May2003/CMB03\\_Program.pdf](http://www.ftpi.umn.edu/workshops/2002-2003/CMB_May2003/CMB03_Program.pdf), University of Minnesota, Minneapolis, USA.

60. **October 2001: Invited Speaker** at the **International Conference** entitled **Astrophysical Polarized Foregrounds**, TESRE, Bologna, Italy.
  61. **September 2001: Invited Speaker** at the **TAUP2001 international conference**, [www.taup-conference.to.infn.it/taup2001.html](http://www.taup-conference.to.infn.it/taup2001.html), national laboratories of Gran Sasso, l'Aquila, Italy.
  62. **July 2001: Invited Speaker** at the **International Conference** entitled **From Time Ordered Data to Component Maps**, Institute for Image Elaboration, Pisa, Italy.
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## Invited Seminars

1. **October 2018**, IISER Trivandrum, India.
2. **July 2017**, Nicolaus Kopernicus Institute, Warsaw, Poland.
3. **March 2017**, Leiden University, Amsterdam, the Netherlands.
4. **February 2015**, JAXA/ISAS, Machida, Japan.
5. **April 2015**, Institute for High Energy Physics, Beijing, China.
6. **April 2014**, KASI, Daejeon, South Korea.
7. **April 2014**, Center for Astronomy and Astrophysics, Shanghai, China.
8. **December 2012**, Columbia University, New York.
9. **November 2012**, Imperial College, London, UK.
10. **May 2009**, Astronomical Observatory in Rome, Italy.
11. **September 2007**, European Space Observatory, Garching, Germany.
12. **May 2007**, Turin University, Italy.
13. **January 2007**, SISSA, Trieste, Italy.
14. **November 2006**, Astronomical Observatory in Bologna, Italy.

15. **November 2006**, University of Helsinki, Finland.
16. **June 2006**, Institute for Astrophysics, Heidelberg. Germany.
17. **February 2006**, Astronomical Observatory in Trieste, Italy.
18. **November 2005**, Autonomous University of Madrid, Spain.
19. **April 2005**, University of Heidelberg, Germany.
20. **August 2004**, Fermilab Astrophysics Center, Chicago, USA.
21. **2004**, University of Sussex, Brighton, UK.
22. **2004**, Astronomical Observatory in Trieste.
23. **2003**, University of Davis California, USA.
24. **2003**, Lawrence Berkeley National Laboratory, California, USA.
25. **2003**, Max Planck Institute for Astrophysics, Garching, Germany
26. **2003**, University of Milan, Italy.
27. **2003**, University of Naples Federico II, Italy.
28. **2000**, University of Sussex, Brighton, UK.
29. **2000**, Fermilab Astrophysics Center, Chicago, USA.
30. **2000**, Scuola Normale Superiore, Pisa, Italy.
31. **2000**, University of Ferrara, Italy.
32. **1995**, Astronomical Observatory in Rome, Italy.
33. **1995**, University of Rome La Sapienza, Italy.