

CURRICULUM VITAE ET STUDIORUM at 11/2/2019

Alessandro Melchiorri

General Information

- *Name :*
Alessandro Melchiorri
- *Birthplace and Birthdate :*
Rome, Italy, 28/5/1969
- *Present Position:*
Associate Professor, Dipartimento di Fisica "G. Marconi", Universita' di Roma "La Sapienza".
- *Nationality:*
Italian
- *Residence:*
Rome (Italy)
- *Professional Address:*
Universita' degli Studi di Roma Sapienza, Ple Aldo Moro 5, 00185, Roma, Italy.
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Education

- 1984-1989 Secondary School certificate at the State Secondary School (Liceo Classico) "Giulio Cesare" (Rome) with marks 60/60.
- 1990-1995 Undergraduate studies in Physics at the University of Rome "La Sapienza". Undergraduate research Thesis "*Cosmic Microwave Background Polarization*", in the group of Prof. N. Vittorio. Graduated with marks 110/110 cum laude, 28/3/1996.
- 11/1997-10/2000 **Ph.D position in Astronomy** at the Physics Department of the University of Rome (Italy). Ph.D. thesis "*Theoretical Studies relative to Cosmic Background Anisotropies*" (Supervisor Prof. N. Vittorio) discussed the 20/3/2001.

Appointments

Academic long term/permanent appointments

- 1997 - 1999 Academic host at the Physics Department, University of Geneva, Switzerland.
- 2000-2002 **Postdoctoral Fellow** at University of Oxford, UK. Fellowship awarded by the Particle Physics and Astronomy Research Council, UK.
- April-May 2002 Academic host at the Dept. of Astrophysical Sciences Princeton University Princeton, USA. Invited by prof. David Spergel.
- 11/2002 - 10/2015 **Ricercatore**, University of Rome "Sapienza".
- 10/2015 - present **Associate Professor**, University of Rome "Sapienza".

Academic short term appointments

- Nov 1999 Academic host at CITA, Canadian Institute of Theoretical Astrophysics, Toronto, Ontario, Canada. Invited by Prof. Richard J. Bond.

11/2004 Academic Host, Fermilab, invited by Prof. Rocky Kolb and Prof. Scott Dodelson.
 3/2005 Academic Host, Caltech, Invited by Prof. Marc Kamionkowski.
 10/2005 Academic Host, Cornell University, Invited by Prof. Rachel Bean.
 (6-7)/2006 Academic Host, UNAM, Mexico, invited by Prof. Axel de La Macorra.
 (11-12)/2007 Science Associate, CERN, Geneva.
 (7/8)/2009 Visiting Professor, University of California, Irvine, USA.
 8/2010 Visiting Professor, University of California, Irvine, USA.
 6/2011 Visiting Professor, University of California, Irvine, USA.
 2/2012 Visiting Professor, UAM, University of Madrid, Madrid, Spain.
 8/2012 Visiting Professor, Jet Propulsion Laboratory/NASA, Pasadena, California, USA.
 8/2013 Visiting Professor, University of California, Irvine, USA.
 9/2013 Visiting Professor, Kavli Institute, SLAC, Stanford, California, USA.
 8/2015 Visiting Professor, SLAC, Stanford, California, USA.
 1/10/2017-30/9/2018 Visiting Professor, University of Manchester, UK.

Other

1996-1997 Civil Service in substitution of the obligatory military service at the School "Centro Elis" (Rome).

Teaching Experience

1998 Assistant at the undergraduate course in Advanced Quantum Mechanics by prof. R. Casalbuoni, Physics Department, University of Geneva.
 1999 Assistant at the undergraduate course in Electrodynamics 2 by prof. R. Durrer, Physics Department, University of Geneva.
 1999 Assistant at the undergraduate course in Electrodynamics 1 by prof. A. G. Clark, Physics Department, University of Geneva.
 2002-2005 Assistant at undergraduate courses in Physics (prof. P. Loverre, E. Massaro, L. Zanello,), University of Rome.
 2002 Course on "CMB and Galaxy Clustering" (2 hours) at 9th Chalonge School in Astrofundamental Physics, Palermo, September 2002.
 2004-2005 20 hours Phd course in Theoretical Cosmology, University of Rome.
 2004-2005 20 hours Phd course in Theoretical Cosmology, University of Salerno.
 2004-2005 40 hours Undergraduate Course in Theoretical Cosmology, University of Rome.
 2004-2005 4 hours Course on "Dark Matter and Dark Energy", International School on SZ Effect, Varenna, Lake Como, Italy, July, 2004.
 2004-2005 4 hours Course on "CMB and Cosmological Parameters", School in Data Analysis and Cosmology, Valencia, September 6-11, 2004.
 2005-2006 40 hours Undergraduate Course in Physical Cosmology, University of Rome.
 2005-2006 60 hours Undergraduate Course in Physics I for Informatics, University of Rome.
 2005-2006 20 hours Phd course in Theoretical Cosmology, University of Rome.
 2006-2007 40 hours Undergraduate Course in Physical Cosmology, University of Rome.
 2006-2007 60 hours Undergraduate Course in Physics I for Informatics, University of Rome.

2006-2007 20 hours Phd course in Theoretical Cosmology, University of Rome.

2007-2008 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2007-2008 60 hours Undergraduate Course in Physics I for Informatics, University of Rome.

2008-2009 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2008-2009 60 hours Undergraduate Course in Physics I for Chemistry, University of Rome.

2008-2009 10 hours Phd course in Theoretical Cosmology, University of Rome.

2009-2010 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2009-2010 36 hours Undergraduate Course in Physics I for Chemistry, University of Rome.

2009-2010 16 hours Phd course in Theoretical Cosmology, University of Salerno, Italy.

2010-2011 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2011-2012 64 hours Undergraduate Course in Astronomy, University of Rome.

2012 32 hours Undergraduate Course in Cosmology, University of Madrid, Spain.

2011-2012 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2012-2013 64 hours Undergraduate Course in Astronomy, University of Rome.

2012-2013 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2012-2013 2 hours PhD course at the "NeXT PhD Summer School", Queen Mary University, London, UK.

2012-2013 1 hour PhD lecture at the "ISAPP 2013 Summer School", Stockholm, Sweden.

2013-2014 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2013 2 hours lectures in "Theory of the CMB" at the "International School of Space Science", "Observing the Universe with the Cosmic Microwave Background", l'Aquila, Italy, April 22-26, 2014.

2014-2015 48 hours Undergraduate Course in Astronomy, University of Rome.

2014-2015 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2015-2016 48 hours Undergraduate Course in Astronomy, University of Rome.

2015-2016 48 hours Undergraduate Course in Physical Cosmology, University of Rome.

2016 4.5 hours lectures, Introduction to Cosmology, ISAPP2016 - International School of Astroparticle Physics, Physics and Astrophysics of Cosmic Rays in Space. Milano Bicocca, September 2016.

2016-2017 48 hours Undergraduate Course in Astronomy, University of Rome.

2016-2017 56 hours Undergraduate Course in Physical Cosmology, University of Rome.

Supervised Students and Final Marks

Laurea Quadriennale (Master Thesis)

- 1. (2003) Paolo Serra, 110/110
- 2. (2005) Tommaso Giannantonio 110/110 and laude
- 3. (2006) Michela Paganelli, 98/110
- 4. (2006) Irene Sorbera, 108/110
- 5. (2006) Barbara Paciello, 110/110
- 6. (2007) Attilio Dariol, 101/110
- 7. (2013) Paola Giammaria, 102/110

Laurea Triennale (Graduate Thesis)

- 1. (2004) Luca Pagano, 110/110 and laude
- 2. (2005) Francesco De Bernardis, 110/110 and laude
- 3. (2005) Roberta Camerini, 110/110 and laude
- 4. (2005) Mirko Pacifici, 105/110,
- 5. (2006) Manuela Venturi, 110/110 and laude
- 6. (2006) Chiara Melchiorre 100/110
- 7. (2006) Stefania Pandolfi 110/110 and Laude
- 8. (2006) Elena Giusarma 106/110
- 9. (2006) Valentina Mangano 110/110
- 10. (2006) Roberta Gerbasi 108/110
- 11. (2006) Luca Naticchioni 110/110
- 12. (2006) Francesca Scipioni 107/110
- 13. (2006) Micol Benetti, 104/110
- 14. (2006) Paolo Fermani, 110/110 and laude
- 15. (2006) Marco Innocenti, 110/110 and laude
- 16. (2006) Simona Iudicone, 106/110
- 17. (2006) Martina Corsi, 110/110 and laude
- 18. (2006) Emanuela Giannini, 110/110 and laude
- 19. (2006) Andrea Maselli, 110/110
- 20. (2006) Lisa Scalone, 108/110
- 21. (2006) Vincenzo Obiso, 110/110 and laude
- 22. (2006) Rosamaria Crea, 110/110 and laude
- 23. (2007) Eloisa Menegoni, 106/110.
- 24. (2007) Selene Risi, 109/110.
- 25. (2007) Alfredo Carpineti, 106/110
- 26. (2007) Maria Archidiacono, 110/110 and Laude
- 27. (2007) Donatella Fiorucci, 110/110
- 28. (2008) Alice Pisani, 110/110
- 29. (2008) Giulia de Angelis 94/110
- 30. (2008) Luigi Perna 98/110
- 31. (2008) Samuele Antonucci 101/110
- 32. (2008) Rosa Maggi 104/110
- 33. (2008) Andrea Bracco 110/110 and Laude
- 34. (2008) Giovanni Pisani 110/110 and Laude

- 35. (2008) Martina Vicinanza 108/110
- 36. (2009) Maria Concetta Tringali 96/110
- 37. (2009) Najla Said 110/110
- 38. (2009) Alessandro Pasqui 99/110
- 39. (2009) Chiara Teodori 96/110
- 40. (2009) Valentina Salvatelli 110/110 and Laude
- 41. (2009) Gioia Rau 97/110
- 42. (2010) Elisabetta Giuliani 107/110
- 43. (2010) Martina Gerbino 110/110 and Laude
- 44. (2010) Federico Bianchini 110/110
- 45. (2011) Alessia Tortosa 99/110
- 46. (2011) Elva Cecconi 102/110
- 47. (2012) Stefano Risoli 104/110
- 48. (2012) Eleonora Buscemi 96/110
- 49. (2012) Giulia Biosa 101/110
- 50. (2012) Lorenzo Pieri 110/110 and Laude
- 51. (2012) Matteo Di Giovanni 104/110
- 52. (2012) Claudia De Luca 108/110
- 53. (2013) Anna Silvia Baldi 107/110
- 54. (2013) Silvia Martocchia 110/110 and Laude
- 55. (2013) Gabriele Coppi 110/110 and Laude
- 56. (2013) Francesca Marchi 110/110
- 57. (2013) Valerio Roscani 102/110
- 58. (2013) Giulia Rosati 86/110
- 59. (2013) Federica Duras 107/110
- 60. (2015) Federica Guidi 110/110 and Laude
- 61. (2015) Giuseppe Gnocchi 110/110 and Laude
- 62. (2015) Lorenzo Zanisi 110/110 and Laude
- 63. (2015) Daniele Notarmuzi, 110/110 and Laude.
- 64. (2015) Davide Guerra, 108/110
- 65. (2016) Stefano Antonini, 110/110 and Laude.
- 66. (2016) William Giare', 110/110 and Laude.

Laurea Specialistica/Magistrale

- 1. (2007) Luca Pagano, 110/110 and Laude, May 2007.
- 2. (2007) Francesco de Bernardis 110/110 and Laude, July 2007.

- 3. (2008) Roberta Camerini, 110/110 and Laude, April 2008.
- 4. (2008) Erminia Calabrese, 110/110 and Laude, July 2008.
- 5. (2008) Matteo Martinelli, 110/110 and Laude, July 2008.
- 6. (2008) Silvia Galli, 110/110 and Laude, October 2008.
- 7. (2008) Stefania Pandolfi, 110/110 and Laude, October 2008.
- 8. (2009) Marco Ruzza, 110/110 and Laude, January 2009.
- 9. (2009) Elena Giusarma, 110/110 and Laude, July 2009.
- 10. (2009) Paolo Fermani, 110/110 and Laude, July 2009.
- 11. (2009) Eloisa Menegoni, 110/110, July 2009.
- 12. (2009) Alessandro Seganti, Co-supervised with Dr. Luca Amendola 110/110 and laude, September 2009.
- 13. (2009) Giammarco Campanella, Co-supervised with Dr. Giovanna Tinetti, 110/110 and laude, September 2009.
- 14. (2009) Andrea Maselli, 110/110 and laude, October 2009.
- 15. (2009) Maria Archidiacono, 110/110 and laude, October 2009.
- 16. (2010) Selene Risi, 110/110 and laude, January 2010
- 17. (2010) Eleonora Di Valentino, 110/110 and laude, July 2010
- 18. (2010) Micol Benetti, 110/110, September 2010.
- 19. (2010) Giovanni Pisani, 110/110, October 2010.
- 20. (2010) Rosa Maggi, 110/110 and laude, December 2010.
- 21. (2011) Alice Pisani, 110/110 and laude, January 2011
- 22. (2011) Martina Corsi, 110/110 and laude, May 2011.
- 23. (2011) Luigi Squillante, 110/110 and laude, May 2011.
- 24. (2011) Valentina Salvatelli 110/110 and laude, July 2011.
- 25. (2011) Najla Said 110/110 and laude, July 2011.
- 26. (2011) Emanuele Castorina 110/110 and laude, September 2011
- 27. (2011) Gioia Rau 110/110 and laude, October 2011
- 28. (2011) Andrea Bracco 110/110 and laude, November 2011
- 29. (2012) Martina Gerbino 110/110 and laude, July 2012
- 30. (2012) Federico Bianchini 110/110 and laude, July 2012.
- 31. (2013) Giacomo Fragione 110/110 and laude, July 2013.
- 32. (2013) Pasquale Bosso 108/110, July 2013
- 33. (2013) Antonella Palmese 110/110 and Laude, October 2013.
- 34. (2013) Alessia Tortosa 110/110 and Laude, October 2013.
- 35. (2013) Laura Salvati 110/110 and Laude, October 2013.
- 36. (2014) Elisabetta Giuliani 110/110 and Laude, October 2014
- 37. (2014) Edwige Pezzulli 110/110 and Laude, Co-supervised with Dr. Raffaella Schneider, October 2014

- 38. (2014) Mattia Mancini 110/110 and Laude, Co-supervised with Dr. Raffaella Schneider, October 2014
- 39. (2015) Valerio Roscani 110/110 and Laude
- 40. (2016) Andrea Caputo, 110/110 and Laude, July 2016.
- 41. (2016) Stefano Paradiso, 110/110 and Laude, September 2016.
- 42. (2016) Riccardo Schiavi, 110/110 and Laude, September 2016.
- 43. (2017) Federica Guidi, 110/110 and Laude, July 2017.
- 44. (2018) William Giar, 110/110 and Laude, July 2018.
- 45. (2018) Massimo Guidi, 110/110 and Laude, December 2018.

Ph. D. students¹

- 1. (2007) Paolo Serra, Astronomy, [postdoc at NASA/AMS, CA, USA] .
- 2. (2010) Luca Pagano, Astronomy, [postdoc at NASA/JPL, CA, USA].
- 3. (2010) Francesco de Bernardis, Astronomy, [postdoc at Irvine, CA, USA].
- 4. (2010) Giulia Gubitosi, Physics, [postdoc at Saclay, Paris, France].
- 5. (2011) Silvia Galli (Joint Resarch project with Prof. James Bartlett, APC, Paris), Physics, [Postdoc at IAP, Paris, France].
- 6. (2011) Erminia Calabrese, Astronomy, [postdoc at University of Oxford, UK].
- 7. (2011) Stefania Pandolfi, Astronomy, [postdoc at Dark Center, University of Copenhagen, DK].
- 8. (2011) Matteo Martinelli, Physics, [postdoc at SISSA, Trieste, Italy].
- 9. (2012) Maria Archidiacono, Astronomy, [postdoc at University of Aarhus, DK]..
- 10. (2012) Eloisa Menegoni, Astronomy, [postdoc at University of Heidelberg, Germany].
- 11. (2013) Micol Benetti, Astronomy, [postdoc at University of Rio de Janeiro, Brasil]
- 12. (2014) Arianna Di Cintio (joint Research project with Alexander Knebe, Madrid), [postdoc at Dark Center, University of Copenhagen, DK].
- 13. (2014) Eleonora di Valentino, Physics, [Postdoc at IAP, Paris, France].
- 14. (2014) Najla Said, Astronomy.
- 15. (2014) Valentina Salvatelli, Astronomy, [Postdoc at Marseille University, France].
- 16. (2014) Andrea Marchini, Physics.
- 17. (2015) Martina Gerbino, Physics, [Postdoc at Oskar Klein Institute, Stockholm University, Sweden]
- 18. (2016) Laura Salvati, Astronomy, [Postdoc at Orsay, Paris University, France].
- 19. (2017) Giovanni Cabass, [Postdoc at University of Munich, Germaany]

Current Ph. D. students

- 1. Fabrizio Renzi, 3rd year, Astronomy.
- 2. Ludovico Capparelli, 3rd year, Physics.
- 3. Mehdi Shokri, 3rd year, Physics.
- 4. William Giar, 1st year, Physics.

Postdocs

¹First position after PhD shown in square brackets for students that remained in academia.

- (2003-2005) Carolina Odman (Marie Curie Postdoc in Rome, La Sapienza, IT)
- (2013-2015) Elena Giusarma (INFN, Theory postdoc).
- (2014-2015) Luca Pagano (Physics Department, Theory postdoc).
- (2019-2020) Purnendu Karmakar (Assegno di ricerca, Ateneo Sapienza).

External Ph. D. Examiner

- Carolina Odman, Cambridge, 2003
- Jussi Valiviita, Helsinki, 2005
- Fabrizio Briscece, Rome, 2008
- Reijo Keskitalo, Helsinki, 2009
- Manuel Pena Jimenez, Valencia, 2013
- Elena Giusarma, Valencia, 2013
- Matteo Costanzi, Trieste, 2015
- Daniele Tavagnacco, Trieste, 2015

Funding Information

- FP6-2002-MOBILITY-5: Cosmic Microwave Background Anisotropies and Polarization: a bridge between cosmology and new fundamental physics, **Principal Investigator**, Grant Value (approximate): 120 Keuro.
- PRIN 2004- "PROGETTO GEMINI: MISURA DEL SEGNALE SUNYAEV-ZELDOVICH DA AMMASSI DI GALASSIE NEI DUE EMISFERI.", **Investigator**, Grant Value (approximate): 300 Keuro.
- PRIN 2006- "COSMOLOGIA MILLIMETRICA CON GRANDI MOSAICI DI RIVELATORI", **Investigator**, Grant Value (approximate): 278 Keuro.
- PRIN 2009- "Spettroscopia millimetrica e submillimetrica per studi ad alta risoluzione di galassie primordiali e ammassi di galassie", **Investigator**, Grant Value (approximate): 257 Keuro.
- PRIN 2012- "Theoretical Astroparticle Physics", **Investigator**, Grant Value (approximate): 426 Keuro.
- PRIN-INAF 2009 "Astronomy probes fundamental physics", **Co-Investigator**, Grant Value (approximate): 80 Keuro.
- Contratto ASI (da call nazionale) COFIS/ASI I/016/07/0, "Constraining Fundamental Physics with Cosmology", **Co-Investigator**, Grant Value (approximate): 40 Keuro.
- Fondi di Ateneo Federato AST 2008 - Universit La Sapienza di Roma, **Principal Investigator**, Grant Value (approximate): 10 Keuro.
- Fondi di Ateneo Federato AST 2009 - Universit La Sapienza di Roma, **Investigator**, Grant Value (approximate): 10 Keuro.
- Fondi di Ateneo 2007- Universit La Sapienza di Roma "Misure di precisione sul fondo cosmico a microonde", **Investigator**, Grant Value (approximate): 30 Keuro.
- Fondi di Ateneo 2010- Universit La Sapienza di Roma "PRECISION OBSERVATIONAL COSMOLOGY", **Investigator**, Grant Value (approximate): 30 Keuro.
- Fondi di Ateneo 2011- "PRECISION COSMOLOGY and FUNDAMENTAL PHYSICS", **Investigator**, Grant Value (approximate): 30 Keuro.
- Fondi di Ateneo 2016- "Cosmic complementarity: using Cosmic Microwave Background anisotropies, Weak Lensing and Clusters to constrain Dark Matter and Dark Energy.", **Principal Investigator**, Grant Value: 15 Keuro.
- Fondi di Ateneo 2017- "Constraining the nature of Dark Matter with Cosmology", **Principal Investigator**, Grant Value: 35 Keuro.
- FFABR 2017, per professori associati, 3K euro.

- Convenzione Quadro tra ASI ed INAF per "Planck LFI Fase E2 Attivit Scientifiche", I/072/09/0., **Co-Investigator**, Grant Value (approximate): 10 Keuro.
- Contratto ASI EUCLID-IC (I/031/10/0), **Co-Investigator**, Grant Value (approximate): 10 Keuro.
- Collaborazione scientifica Tecnologica Italia-Slovenia "Cosmobridge" (Bando Ministero degli Esteri), **Co-Investigator**, Grant Value (approximate): 5 Keuro.
- INFN Grant for the organization of a 2 months workshop at the Galileo Galilei Institute in Florence, 2009, **Co-Investigator**, Grant Value (approximate): 100 Keuro.
- Italian Physical Society Grant for the organization of a Enrico Fermi School in Varenna, "New Horizons for Modern Cosmology", 2013, **Co-Investigator**, Grant Value (approximate): 60 Keuro.
- INFN Grants for the coordination of the Astroparticle Physics node in Rome, FA-51 and TASP, **Principal Investigator**, approximately 10 Keuro par year, since 2006.

Prizes and awards

- Sapienza Ricerca 2010 Prize for the best research in physics at the university of Rome "Sapienza" in 2010.
- Abilitazione Scientifica Nazionale 2012, idoneita' a professore associato per i settori 02/A1, 02/A2, 02/C1.
- Abilitazione Scientifica Nazionale 2012, idoneita' a professore ordinario per il settore 02/A2.
- Abilitazione Scientifica Nazionale 2017, idoneita' a professore ordinario per il settore 02/C1.

Collaboration and Coordination Membership

- Associate INFN, Astroparticle Theoretical Physics node in Rome La Sapienza. Coordinator of "Iniziativa Specifica FA51" Astroparticle Physics node in Rome.
- Associate INAF.
- Planck Scientist (I have the rights to sign all future papers coming from the Planck satellite experiment) and member of the PLANCK LFI Core Team.
- Member of the EUCLID satellite Science Team (Red Book).
- Member of BOOMERANG (Balloon Observations Of Millimetric Extragalactic Radiation AND Geomagnetism) experiment. <http://oberon.roma1.infn.it/boomerang/b2k/>
- Member of the OLIMPO experiment.
- Member of the MITO experiment.
- Member of the SAGACE satellite Science team (Proposal).
- Member of the CORe satellite Science team (Proposal).
- Member of the Herschel-SPIRE Legacy Survey (HLS) Science Team (Proposal).
- Co-coordinator of Oxford Planck Surveyor Data Processing Center (2000-2002).
- Co-coordinator of Oxford node of CMBNET TMR Network (2000-2002).
- Co-organizer of CMBNET, Organisational Workshop, 6-8 December 2000, Oxford, UK.
- Co-organizer of CMBNET Workshop on Science and Parameter Extraction, Università di Tor Vergata, Roma, Italy, May 24-25, 2001.
- Co-organizer of CMBNET Workshop on Science and Parameter Extraction, University of Oxford, Oxford, UK, February 20-21, 2003.
- Co-organizer of Oxford-Princeton Workshop on Cosmology, Princeton University, Princeton, USA, March 20-21, 2003.
- Organizer of the 2009 Workshop at the Galileo Galilei Institute in Florence "New Horizons For Modern Cosmology".

- Co-Organizer of the "Azores School on Observable Cosmology", Azores, Portugal, September 2011
- Co-director of the "New Horizons for Observational Cosmology" Enrico Fermi SIF School, Varenna, Lake Como, Italy, 2013
- Referee for Physical Review D, Physical Review Letters, Astrophysical Journal, Astronomy and Astrophysics, International Journal of Modern Physics D, JCAP, JHEP, Monthly Notices of the Royal Astronomical Society, Nature Astronomy.
- Invited Editor for New Astronomy Reviews, Proceedings of the 2nd CMBnet Workshop (February 2003, Oxford).
- Invited Editor for Nuclear Physics B, Proceedings Supplement, Proceedings of the GGI conference (February 2009, Florence).

Foreign Languages

- **a.** English (good)
- **c.** French (good)

Summary of Scientific Achievements

According to the **inSPIRE HEP** database (<http://inspirehep.net/?ln=it>) at 11/2/2019 I can retrieve the following bibliometric information:

- Total Number of Citeable Papers: 419.
- Total Number of Citations: 51.929
- Mean number of Citations per Article: 123.9
- h-index: 94

According to the **SCOPUS** database (<https://www.scopus.com/home.url>) at 11/2/2019 I can retrieve the following bibliometric information:

- Total Number of Citeable Papers: 395.
- Total Number of Citations: 27240.
- Mean number of Citations per Article: 68.9
- h-index: 70

According to the **ISI web of Science** database (<http://apps.webofknowledge.com>) at 16/4/2018 I can retrieve the following bibliometric information (full period):

- Total Number of Citeable Papers: 399.
- Total Number of Citations: 31703.
- Mean number of Citations per Article: 79.5
- h-index: 82
- Total Impact Factor: 1820
- Impact Factor per article: 4.6

Invited talks at Conferences and Advanced Schools

- 1. 19th Texas Symposium on Relativistic Astrophysics and Cosmology, held in Paris, France, Dec. 14-18, 1998. "The Gravitational Wave Contribution to the Cosmic Microwave Background".
- 2. Topological Defects and the non-equilibrium dynamics of symmetry breaking phase transition, Les Houches, 16th-26th February, 1999. "Topological Defects in Cosmology"
- 3. Les Rencontres de Physique de la Vallée d'Aoste, La Thuile, Aosta, February 27-March 4, 2000. *Plenary Talk*, "Round table on the future of Cosmology and Particle Physics".
- 4. VIII Convegno su Problemi di Fisica Teorica, Cortona 2000, 10-20 June 2000. **Plenary Talk**. "Boomerang e i modelli cosmologici".
- 5. Problems of vacuum energy, 24-26 August 2000, NORDITA and TAC, Copenhagen, Denmark; **Plenary Talk**. "Consequences on the Cosmological Constant from the BOOMERanG experiment".
- 6. EuroConference on Frontiers in Particle Astrophysics and Cosmology, San Feliu de Guixols, Spain, 30 September - 5 October 2000; "Big bang nucleosynthesis and the Boomerang experiment"
- 7. "Higgs and Supersymmetry", Orsay, Paris, March 19-22, 2001; **Plenary Talk**, "Balloon experiments for CMB"
- 8. Convegno Informale di Fisica Teorica, Cortona, 30 May-2 June 2001; **Plenary Talk**, "Nuovi risultati da Boomerang".
- 9. "Frontiers of the Universe", XIII Rencontres de Blois, 17th - 23rd June 2001; **Plenary Talk**, "Cosmological Parameters from BOOMERanG".
- 10. COSMO-01 International Workshop on Particle Physics and the Early Universe, Rovaniemi, Aug 30-Sep 04, 2001; **Plenary Talk**, "Cosmological parameters from BOOMERanG"
- 11. Frontiers in Particle Astrophysics and Cosmology, Lenggries (Munich), Germany, 29 September-4 October 2001; **Plenary Talk**, "Status of CMBR".
- 12. 4th Heidelberg International Conference on Dark Matter in Astro- and Particle Physics, Cape Town, South Africa (February 2002. Eds. H. Klapdor-Kleingrothaus and R. Viollier). **Plenary Talk**, "Multiple Peaks in the CMB from BOOMERanG and DASI: Consequences for Cosmology".
- 13. "MATTER-ANTIMATTER ASYMMETRY", XIV Rencontres de Blois, 16th - 22nd June 2002; **Plenary Talk**, "Cosmological parameters: status and prospects".
- 14. "ON THE NATURE OF DARK ENERGY", XVIIIth IAP Colloquium, Paris, 1st-5th July 2002; "The Death of Quintessence ?".
- 15. 8th Summer Institute at Gran Sasso National Laboratory, "New Dimensions in Astroparticle Physics", July 7-19, 2002, Assergi, Italy; **Plenary Talk**, "Cosmological parameters: status and prospects"
- 16. TAUP 2001 (7th international workshop on Topics in Astroparticle and Underground Physics), Sep 2001, Laboratori Nazionali del Gran Sasso, Assergi, Italy; "Early-Universe constraints from Boomerang, Dasi and Maxima"
- 17. JENAM 2002, The Cosmology of Extra dimensions and varying Fundamental Constants. Porto, Portugal, 4-7, September 2002; **Plenary Talk**, "CMB and Cosmological Parameters: Status and Prospects".
- 18. INTERNATIONAL SCHOOL OF ASTROPHYSICS "DANIEL CHALONGE", ASTROFUNDAMENTAL PHYSICS, Palermo, September 7-18, 2002; **Plenary Talk**, "CMB and Galaxy Clustering".
- 19. COSMO-02, International Workshop on Particle Physics and the Early Universe, Chicago, Illinois, USA, September 18-21, 2002; "New Constraints on Dark Matter and Dark Energy"
- 20. Spanish Relativity Meeting in Gravitation and Cosmology, ERE- 2002, Menorca, Spain, September 22-24, 2002; **Plenary Talk**, "CMB and Cosmological Parameters: Status and Prospects".
- 21. Supersymmetry and the Early Universe. Annual School and Mid-Term Review Meeting of the Fifth Framework, EC Network (HPRN-CT-2000-00152) Oxford, 26-29 September 2002; **Plenary Talk**, "CMB determination of the cold dark matter density".
- 22. CMB and Cosmology: Where Are We? CMBNet Ringberg Meeting and Mid Term Review (2-6 December 2002, Ringberg Castle, Tegernsee, Germany); "Constraints on Inflation from CMB measurements".
- 23. 1st Oxford-Princeton Workshop on Cosmology Dept. of Astrophysical Sciences, Peyton Hall, Princeton University, USA. March 17-18th, 2003; "The state of the equation of state".

- 24. Euresco Conference, 'What comes beyond the Standard Model', 12. - 17. July 2003 Portoroz, Slovenja; **Plenary Talk**, "CMB and Cosmological Parameters: Status and Prospects".
- 25. AHEP 2003, International Workshop on Astroparticle and High Energy Physics October 14 - 18, 2003, Valencia, Spain; **Plenary Talk**, "CMB and Cosmological Parameters: Status and Prospects".
- 26. Rencontres de Moriond 2004, Exploring the Universe Contents and Structures of the Universe La Thuile, Italy (March 28 - April 4, 2004); **Plenary Talk**, "New constraints on Dark Energy"
- 27. International Enrico Fermi School of Physics, Background Microwave Radiation and Intracluster Cosmology, 6-16 July 2004, Varenna, Italy. **Invited Lecture**, "New constraints on Dark Matter and Dark Energy"
- 28. Ecole Internationale Daniel Chalonge, 8th Paris Cosmology Colloquium 2004, Observatoire de Paris, Paris. 9th-10th DECEMBER 2004 **Plenary Talk**, 'Cosmological constraints on Neutrino Physics'
- 29. 3rd Oxford-Princeton Workshop on Astrophysics and Cosmology Jadwin Hall, Princeton University, USA. February 28th-March 2nd, 2005. **Plenary Talk**, "Dark energy and the ISW"
- 30. Incontri informali di Fisica Teorica, Cortona, 28 Maggio 2005, "L'effetto Sachs Wolfe Integrato", **Invited Talk**
- 31. Ecole Internationale Daniel Chalonge, 9th Paris Cosmology Colloquium 2005, Observatoire de Paris, Paris. 26th-30th June 2005 **Plenary Talk**, 'Cosmology and Neutrino Physics'
- 32. Cosmo-05, Bonn. August 28 - September 01, 2005, "New Constraints on Neutrino Physics"
- 33. ENTApP Dark Matter meeting at SISSA, October 2005, Round Table on "The covariant formulation of the MOND theory as an alternative to the existence of dark matter", **Invited Talk**.
- 34. NO-VE III International Workshop on: "NEUTRINO OSCILLATIONS IN VENICE", February 7-10, 2006, "Neutrino Masses in Cosmology", **Invited talk**.
- 35. Fundamental Physics With Cosmic Microwave Background Radiation, Irvine, March 23-25, 2006. "Constraints on Neutrino Physics from Cosmology", **Invited Talk**
- 36. L'eredit scientifica di Ettore Majorana, Rome, December 7th, 2006. "L'Universo dei Neutrini", **Invited talk**.
- 37. Problemi Attuali di Fisica Teorica, Vietri sul Mare, Salerno, March 30th-April 4th 2007, "WMAP-normalized Inflationary Model Predictions and the Search for Primordial Gravitational Waves with Direct Detection Experiments", **Invited Talk**.
- 38. XII International Workshop on Neutrino Telescopes, Venice, March 6-9, 2007, "Is Cosmology Compatible with Sterile Neutrinos ?", **Invited Talk**.
- 39. XIXmes Rencontres de Blois, Matter and energy in the Universe: from nucleosynthesis to cosmology, Blois, France, 20th May - 25th May, 2007, "New Constraints on Neutrino Physics from Cosmology", **Invited Talk**.
- 40. IFAE 2007, VI edizione degli Incontri sulla Fisica delle Alte Energie, 11-13 Aprile 2007, Napoli, "New Constraints on Neutrino Physics from Cosmology", **Invited Talk**.
- 41. DAC07 Data Analysis in Cosmology 2007, Santander, Spain, 9-12 July, 2007, "Cosmology and Fundamental Physics", **Invited Talk**.
- 42. Mini-workshop on Dark-Energy and Gravitational Waves, July 25 - 27, 2007, APCTP Headquarters, Pohang, South Korea, "New Constraints on the Dark Side", **Invited Talk**.
- 43. Ecole Internationale Daniel Chalonge 11th Paris Cosmology Colloquium 2007, August 16-18, 2007, "New Constraints on the Dark Side", **Invited Talk**.
- 44. The Path to Neutrino Mass, Workshop 3-6 September 2007, University of Aarhus, "Constraining Neutrino Mass with Cosmology", **Invited Talk**.
- 45. Societa' Italiana di Fisica, XCIII National Congress Pisa, 24 - 29 September 2007, "New Constraints on the Dark Side", **Invited Talk**.
- 46. European Science Foundation Exploratory Workshops. Porto, 26-30 March 2008, "New Constraints on the Dark Side", **Invited Talk**.
- 47. GWADW2008 Workshop, Elba Island, Italy, May 12 to 18, 2008, "The Cosmological Gravitational Wave Background", **Invited Talk**.

- 48. VIII Mexican School on Gravitation and Mathematical Physics "Speakable and unspeakable in gravitational physics", 7/12/2009, Mexico, **Invited Talk**
- 49. GGI Institute, Conference on "The Dark Matter Connection: Theory and Experiment", May 17th-21st 2010, Florence, Italy. "Precision Cosmology. Status and Perspectives", **Invited Talk**.
- 50. IRAP PHD Lectures, February 1st-19th, Observatoire de la Cote d'Azur, Nice, France., 1st-19th February 2010. "New Results on Cosmic Microwave Background Anisotropies", **Invited Lecture**.
- 51. 5th Iberian Cosmology Meeting, 29-31 March 2010, Porto, Portugal. "New Constraints on Neutrino Mass and Dark Energy Equation of State", **Invited Talk**.
- 52. School on "Neutrino Masses", Padova 3-6 May 2010, Italy. "Neutrinos in Cosmology", **Invited Talk**.
- 53. PASCOS 2010, July 19th-23rd 2010, Valencia, Spain. "CMB Anisotropies: Status and Perspectives", **Invited Plenary Talk**.
- 54. The second Galileo - Xu Guangqi meeting, July 12-18, 2010, Ventimiglia, Italy, "CMB Anisotropies: Status and Perspectives", **Invited Talk**.
- 55. COSMO/CosPA 2010, 27 September- 1 October 2010, University of Tokyo, Tokyo, Japan, "CMB Anisotropies: Status and Perspectives", **Invited Talk**.
- 56. NOW-2010, 4th-11th September 2010, Conca Specchiulla, Otranto Italy, "Neutrinos in cosmology", **Invited Talk**.
- 57. Miami-2010, 14th-19th December 2010, Fort Lauderdale, Florida, USA, "Constraining Fundamental Physics with CMB anisotropies", **Invited Talk**.
- 58. ESSENTIAL COSMOLOGY FOR THE NEXT GENERATION, January 10-14, 2011 in Puerto Vallarta, Mexico, "CMB constraints on fundamental physics", **3 Invited Lectures**
- 59. XIV International Workshop on Neutrino Telescopes, March 15-18, 2011, Venice, Italy, **Invited Talk**, "Cosmology and Neutrino Masses".
- 60. Workshop on Beyond Three Family Neutrino Oscillations, May 3-4 2011, LNGS, Gran Sasso, Italy, **Invited Talk**, "Sterile neutrino constraint from cosmology".
- 61. Neutrini in Cosmologia, Scuola di Formazione INFN, May 16-18 2011, Padova, Italy, **Invited Lecture**, Proprieta' dei neutrini dalle misure cosmologiche .
- 62. Euclid science workshop, 23-25 May 2011, Space Science Center / DARK, Copenhagen, Denmark, **Invited Talk**, "Constraining Modified Gravity and Dark Energy with Euclid".
- 63. DEUS workshop, 8-12 August 2011, Space Science Center / DARK, Copenhagen, Denmark, **Invited Talk**, "A possible indication for Dark Radiation from current cosmological data".
- 64. Azores School on Observational Cosmology, September 1-6, 2011 in Angro do Heroismo, Azores, Portugal, "CMB constraints on fundamental physics", **3 Invited Lectures**
- 65. Third Galileo - Xu Guangqi meeting, October 11-15, 2011 National Astronomical Observatories - Beijing (China), **Invited Talk**, "CMB constraints on Neutrino Physics"
- 66. IRAP PHD Lectures, September 13-15, Observatoire de la Cote d'Azur, Nice, France., 2011. "New Results on Cosmic Microwave Background Anisotropies", **2 Invited Lectures**.
- 67. "ERC Starting Grant Kick-off meeting", November 8-9, 2011, GRAPPA, Amsterdam, **Invited Talk**, "CMB constraints on Dark Matter"
- 68. "PASCOS 2012", June 3-8, 2012, Merida, Mexico, **Invited Plenary Talk**, "New Results on CMB anisotropies"
- 69. "GGI Conference: What is ν ?", June 24-29, 2012, Florence, Italy, **Invited Plenary Talk**, "New Results on CMB anisotropies"
- 70. "NOW 2012", September 9-16, 2012, Otranto, Italy, **Invited Plenary Talk**, "New Constraints on Neutrino Physics from Cosmology"
- 71. "NuMASS 2013", February, 2013, Milano, Italy, **Invited Plenary Talk**, "New Constraints on Neutrino Physics from Cosmology"
- 72. "The Universe as seen by Planck, 47th ESLAB symposium", 2-5 April, 2013, ESTEC, Holland, **Invited Talk**, "Planck constraints on Neutrino Physics"

- 73. "Chalonge Meudon Workshop 2013: Warm Dark Matter Galaxies in Agreement with Observations: Formation, Evolution and Supermassive Black Holes", 5-7 June, 2013, Observatoire de Paris Meudon, France, **Invited Plenary Talk**, "Planck constraints on Neutrino Physics"
- 74. "ISAPP 2013 School", 1-6 August, 2013, Djuröaset, Stockholm, Sweden, **Invited Lecture**, "Planck constraints on Fundamental Physics"
- 75. "Meeting PRIN", 16-17 May, 2013, Scuola Normale di Pisa, Pisa, Italy, **Invited Talk**, "Planck constraints on Fundamental Physics"
- 76. "NeXT PhD Summer School", 17-19 June, 2013, Queen Mary College, London, UK **Invited Lectures**, "Planck constraints on Fundamental Physics"
- 77. "OMEG12 Conference", 12-18 November, 2013, KEK, Tsukuba, Japan, **Invited Plenary Talk**, "Planck constraints on Fundamental Physics"
- 78. "Cosmology on the Beach 2014", 11-17 January, 2014, Los Cabos, Mexico, **Invited Plenary Talk**, "Planck constraints on Fundamental Physics"
- 79. "Capri 2014 Flavour Physics Workshop", Villa Orlandi, Anacapri, Island of Capri (NA), Italy, on 23-25 May 2014, **Invited Plenary Talk**, "Planck constraints on Fundamental Physics"
- 80. "International School of Space Science", "Observing the Universe with the Cosmic Microwave Background", l'Aquila April 22-26, 2014. "Theory of the CMB".
- 81. "What Next ? workshop", Padova University, 1-2 December 2014, **Invited Talk**, "New constraints from Planck"
- 82. "Meeting on Fundamental Cosmology" Santander, 17-19 June 2015, **Invited Talk**, "Constraining Fundamental Physics with Fundamental Cosmology".
- 83. Ecole Internationale Daniel Chalonge , 19th Paris Cosmology Colloquium 2015, Observatoire de Paris, 22-24 July 2015. **Invited Talk**, "The cosmological data set analysis with Neutrinos and Sterile Neutrinos".
- 84. 43rd SLAC Summer Institute, 10-21 Aug 2015, Stanford, USA, **Invited Lectures**, "Neutrinos and Cosmology"
- 85. The 12th International Workshop Dark Side of the Universe 25-29 July 2016, University of Bergen, Norway, **Invited Plenary Talk**, "Anomalies and tensions in current cosmological data and hints for new physics"
- 86. NOW2016, Otranto (Lecce, Italy) September 4 - 11, 2016, **Invited Plenary Talk**, "Future precision cosmology and neutrinos"
- 87. ISAPP2016 - International School of Astroparticle Physics Physics and Astrophysics of Cosmic Rays in Space, University of Milano Bicocca - Milano (Italy), 12-20 September 2016, **Invited Lectures**, "Precision cosmology"
- 88. NOW2016, Otranto (Lecce, Italy) September 4 - 11, 2016, **Invited Plenary Talk**, "Future precision cosmology and neutrinos"
- 89. Towards a next space probe for CMB observations and cosmic origins exploration, 17-20 May 2016, CERN, Geneva, Switzerland, **Invited Talk**, "CMB constraints on fundamental physics"
- 90. Origin of Mass 2017 Cosmology and Dark Matter, Monday, May 1 to Thursday, May 4, 2017 CP3-Origins, SDU, Odense, Denmark. **Invited Plenary Talk**, "Anomalies and tensions in current cosmological data and hints for new physics"

Invited Seminars

- (1) "The Gravitational-Wave contribution to the CMB anisotropies", Seminars of the cosmology and particle physics groups, Physics Department University of Geneva , 5/2/1998.
- (2) "A flat universe from the North American test flight of Boomerang", Physics Department University of Geneva, 4/2/2000.
- (3) "A measurement of Omega from the Cosmic Microwave Background Anisotropies", TAC, Copenhagen, 10/4/2000.
- (4) "A measurement of Omega from the Cosmic Microwave Background Anisotropies", SISSA, Trieste, 11/5/2000.

- (5) “A new measurement of the curvature of the Universe with the BOOMERANG experiment”, Laboratori Nazionali del Gran Sasso, 6/6/2000.
- (6) “Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background: Significance and Consequences for Cosmology”, Seminars of the cosmology and particle physics groups, Physics Department University of Geneva, 8/6/2001.
- (7) “Cosmology through the eyes of BOOMERanG and Maxima”, Seminars and Colloquia, Ecole Polytechnique de Lausanne, Losanna, 11/6/2001.
- (8) “Multiple Peaks in the Angular Power Spectrum of the CMB”, Center for Astroparticle Physics and Cosmology, Imperial College, London, 15/6/2001.
- (9) “Cosmologia attraverso Boomerang e Maxima”, Dipartimento di Fisica Teorica, Turin, 3/4/2001.
- (10) “Recent results from the Boomerang experiment”, CERN, Geneva, 31/1/2001.
- (11) “Cosmology with the Boomerang experiment”, Department of Physics and Astronomy, Sussex University, UK, 26/1/2001.
- (12) ‘Recent results from the Boomerang experiment’, Institute of Cosmology, Portsmouth, 15/3/2001.
- (13) ‘Multiple peaks in the CMB power spectrum’, DAMTP, Cambridge, 5/11/2001.
- (14) “Cosmological Parameters: Status and Prospects”, 15/5/2002, Physics Department, University of Birmingham, UK.
- (15) “Cosmological Parameters: Status and Prospects”, 12/7/2002, Osservatorio Astronomico di Arcetri, Firenze, Italia.
- (16) “Cosmological parameters: status and prospects” 6/5/2002, Rutgers, Physics and Astronomy Department, N.J., USA
- (17) “Multiple peaks in the CMB power spectrum”, 3/5/2002, Princeton, Physics Department, N.J. USA.
- (18) “Cosmological parameters: status and prospects”, 28/6/2002, Physics Department, Geneva, CH.
- (19) “Cosmological parameters: status and prospects”, 23/5/2002, Osservatorio di Capodimonte, Naples, Italy.
- (20) “CMB Anisotropies: Status and Prospects”, 30/4/2003, Physics Colloquia, University of Zurich, CH.
- (21) “CMB Anisotropies: Status and Prospects”, 1/4/2003, Observatoire de Nice, Nice, France.
- (22) “New Constraints on Dark Matter and Dark Energy”, 3/7/2004, Physics Department, Rome.
- (23) “Cosmological constraints from Microwave Background Anisotropy and Polarization”, 23/6/2004, Dipartimento di Fisica, Università di Bari, Italy.
- (24) “Cosmological constraints on Neutrino Mass”, 3/12/2004, Caltech, California, USA
- (25) “Cosmological constraints on Neutrino Physics”, 21/6/2005, Physics Department, Helsinki, Finland.
- (26) “Cosmological constraints on Neutrino Mass”, 14/7/2005, Tor Vergata University, Rome, Italy.
- (27) “Latest news from the Universe”, 24/8/2005, Werner Heisenberg Institut, Munich, Germany.
- (28) “Dark Energy in the Universe”, 6/10/2005, Physics Department, University of Barcelona, Spain.
- (29) “Dark Energy in the Universe”, 11/11/2005, Physics Department, University of Chicago, U.S.A..
- (30) “Dark Energy in the Universe”, 16/11/2005, Physics and Astronomy Department, Cornell University, U.S.A..
- (31) “Dark Energy in the Universe”, 18/11/2005, Physics and Astronomy Department, Columbia University, U.S.A..
- (32) “Cosmological constraints on Neutrino Physics”, 17/2/2006, Physics Department, “Università Federico II”, Naples, Italy.

- (33) “Cosmological constraints on Neutrino Physics”, 12/5/2006, Physics Department, University of Salerno, Italy.
- (34) “Constraints on neutrino Physics from cosmology and their impact on world neutrino data”, 28/6/2006, Physics Department, UNAM, Mexico
- (35) “Dark Energy in the Early Universe”, 23/1/2007, Scuola Normale Superiore, Pisa, Italy.
- (36) “Dark Energy in the Early Universe”, 31/1/2007, Physics Department, University of Ferrara, Italy.
- (37) “Dark Energy in the Early Universe”, 1/2/2007, ICTP, Trieste, Italy.
- (38) “I Confini dell’Universo”, 8/2/2007, Accademia dei Lincei, Rome, Italy.
- (39) “New Constraints on the Dark Side of the Universe”, 11/11/2007, DESY, Hambourg, Germany.
- (40) “Exploring the Dark Energy Redshift Desert with the Cosmic Velocity Shift”, 21/11/2007, CERN, Geneva, Switzerland.
- (41) “New Constraints on the Cosmological Dark Side”, 14/12/2007, UAM, Madrid, Spain
- (42) “New Cosmological Constraints on Neutrino Parameters “, 6/12/2007, LAPTH, Annecy, France
- (43) “New Cosmological Constraints on Neutrino Parameters “, 22/11/2007, CERN, Geneva, Switzerland
- (44) “New Cosmological Constraints on Neutrino Parameters “, 27/2/2008, INAF/IASF, Bologna, Italy
- (45) “New Constraints from Cosmic Microwave Background Anisotropies”, 13/4/2008, Scuola Normale Superiore, Pisa.
- (46) “New Constraints from Cosmic Microwave Background Anisotropies”, 15/1/2009, APC, Universite’ de Paris, Paris.
- (47) “New Constraints from Cosmic Microwave Background Anisotropies”, 10/3/2009, SISSA, Italy.
- (48) “New Cosmological Constraints on Neutrino Physics”, 31/3/2009, LUTH, Paris.
- (49) “Fundamental Physics from CMB anisotropies”, 14/1/2010, University of Valencia, Spain.
- (50) “Inspirational Lecture on Cosmology”, 25/5/2011, DARK, Copenhagen, Denmark.
- (51) “New Cosmological Constraints on Neutrino Physics”, 22/6/2011, Astronomy Department, University of San Diego, San Diego, CA, USA.
- (52) “New Results On Cosmic Microwave Background Anisotropies”, 4/7/2012, ICTP, Sao Paulo, Brazil.
- (53) “Planck constraints on Fundamental Physics”, 19/4/2013, Observatory of Monte Porzio, Rome, Italy
- (54) “Planck constraints on Fundamental Physics”, 22/4/2013, University of Madrid Autonoma, Madrid, Spain.
- (55) “Planck constraints on Fundamental Physics”, 29/5/2013, LNF-INFN, Rome, Italy.
- (56) “Planck constraints on Fundamental Physics”, 17/9/2013, Kavli Institute, Stanford, California, USA.
- (57) “Planck constraints on Fundamental Physics”, University of Manchester, 1/11/2018, UK

Publications on refereed journals

- (1) P. De Bernardis, A. Balbi, G. De Gasperis, **A. Melchiorri**, N. Vittorio; “CMB anisotropy at degree angular scales and the thermal history of the Universe”; *Astrophys. J.* **480**, 1, (1997).
- (2) R. Durrer, M. Kunz, **A. Melchiorri**; “Cosmic Microwave Background Anisotropies from Scaling Seeds: Global Defect Models”; *Phys. Rev. D.* **59**, 123005 (1999).
- (3) **A. Melchiorri**, M.V. Sazhin, V.V. Shulga, N. Vittorio; “The Gravitational-Wave contribution to the CMB anisotropies”; *Astrophys.J.*, **518**, 562-569 (1999).
- (4) **A. Melchiorri**, F. Vernizzi, R. Durrer, G. Veneziano; “Cosmic Microwave Background anisotropies and extra dimensions in String Cosmology”; *Phys. Rev. Lett.*, **83**, 4464-4467, (1999).

- (5) P.D. Mauskopf, P.A.R. Ade, J.J. Bock, J. Borrill, A. Boscaleri, B.P. Crill, P. de Bernardis, G. De Troia, P. Farese, P. Ferreira, M. Giacometti, V.V. Hristov, A. Iacoangeli, A. H. Jaffe, A.E. Lange, S. Masi, **A. Melchiorri**, L. Miglio, C.B. Netterfield, E. Pascale, F. Piacentini, and J.E. Ruhl; “*Measurement of a Peak in the Cosmic Microwave Background Power Spectrum from the test flight of Boomerang*”; *Astrophys.J. Letters*, **536**, L59-L62, (2000).
- (6) **A. Melchiorri**, P.A.R. Ade, J.J. Bock, J. Borrill, A. Boscaleri, B.P. Crill, P. de Bernardis, G. De Troia, P. Farese, P. Ferreira, M. Giacometti, V.V. Hristov, A. Iacoangeli, A. H. Jaffe, A.E. Lange, S. Masi, P.D. Mauskopf, L. Miglio, C.B. Netterfield, E. Pascale, F. Piacentini, and J.E. Ruhl; “*A Measurement of Ω from the North American test flight of Boomerang*”; *Astrophys.J. Letters*, **536**, L63-L66, (2000).
- (7) P. de Bernardis, P.A.R. Ade, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, K. Coble, B.P. Crill, G. De Gasperis, P.C. Farese, P.G. Ferreira, K. Ganga, M. Giacometti, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, A.E. Lange, L. Martinis, S. Masi, P. Mason, P.D. Mauskopf, **A. Melchiorri**, L. Miglio, T. Montroy, C.B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, S. Prunet, S. Rao, G. Romeo, J.E. Ruhl, F. Scaramuzzi, D. Sforna, N. Vittorio; “*A Flat Universe from High-Resolution Maps of the Cosmic Microwave Background Radiation*”; *Nature* **404**, 955-959, (2000).
- (8) A.E. Lange, P.A.R. Ade, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, K. Coble, B.P. Crill, P. de Bernardis, P. Farese, P. Ferreira, K. Ganga, M. Giacometti, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, L. Martinis, S. Masi, P.D. Mauskopf, **A. Melchiorri**, T. Montroy, C.B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, S. Prunet, S. Rao, G. Romeo, J.E. Ruhl, F. Scaramuzzi, D. Sforna; “*First Estimations of Cosmological Parameters From BOOMERANG*”; *Phys.Rev.*, D63, 042001, (2001).
- (9) A.H. Jaffe, P.A.R. Ade, A. Balbi, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, K. Coble, B.P. Crill, P. de Bernardis, P. Farese, P.G. Ferreira, K. Ganga, M. Giacometti, S. Hanany, E. Hivon, V.V. Hristov, A. Iacoangeli, A.E. Lange, A.T. Lee, L. Martinis, S. Masi, P.D. Mauskopf, **A. Melchiorri**, T. Montroy, C.B. Netterfield, S. Oh, E. Pascale, F. Piacentini, D. Pogosyan, S. Prunet, B. Rabii, S. Rao, P.L. Richards, G. Romeo, J.E. Ruhl, F. Scaramuzzi, D. Sforna, G.F. Smoot, R. Stompor, C.D. Winant, J.H.P. Wu; “*Cosmology from Maxima-1, Boomerang and COBE/DMR CMB Observations*”; *Phys. Rev. Lett.*, 86, 3475-3479, (2001).
- (10) William H. Kinney, **A. Melchiorri**, Antonio Riotto; “*New Constraints on inflation from the Cosmic Microwave Background*”; *Phys.Rev.* D63, 023505, (2001).
- (11) S. Esposito, G. Mangano, **A. Melchiorri**, G. Miele, O. Pisanti; “*Testing Standard and Degenerate Big Bang Nucleosynthesis with BOOMERanG and MAXIMA-1*”; *Phys.Rev.* D63, 043004, (2001).
- (12) F. Vernizzi, **A. Melchiorri**, R. Durrer; “*CMB anisotropies from pre-big bang cosmology*”; *Phys.Rev.* D63, 063501, (2001).
- (13) R. Durrer, M. Kunz, **A. Melchiorri**; “*Reproducing the observed Cosmic microwave background anisotropies with causal scaling seeds*”; *Phys.Rev.* D63, 081301, (2001).
- (14) Louise M. Griffiths, **A. Melchiorri**, Joseph Silk; “*CMB Constraints on a Baryonic Dark Matter-Dominated Universe*”; *Astrophys.J. Letters*, (2001) L5-L10, (2001).
- (15) Rachel Bean, Steen H. Hansen, **A. Melchiorri**; “*Early-universe constraints on Dark Energy*”; *Phys. Rev. D* 64, 103508 (2001)
- (16) P.P. Avelino, S. Esposito, G. Mangano, C.J.A.P. Martins, **A. Melchiorri**, G. Miele, O. Pisanti, G. Rocha, P.T.P. Viana; “*Early-universe constraints on a time-varying fine structure constant*”; *Phys. Rev. D* 64, 103505 (2001)
- (17) I. Ferreras, **A. Melchiorri**, J. Silk; “*New Constraints on the age of the Universe*”; *MNRAS* 327, L47 (2001)
- (18) P. de Bernardis, P.A.R. Ade, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, K. Coble, C.R. Contaldi, B.P. Crill, G. De Troia, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, W.C. Jones, A.E. Lange, L. Martinis, S. Masi, P. Mason, P.D. Mauskopf, **A. Melchiorri**, T. Montroy, C.B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, F. Pongetti, S. Prunet, G. Romeo, J.E. Ruhl, F. Scaramuzzi; “*Multiple Peaks in the Angular Power Spectrum of the Cosmic Microwave Background: Significance and Consequences for Cosmology*”; *Astrophys.J.* 564 (2002) 559-566.
- (19) S. H. Hansen, G. Mangano, **A. Melchiorri**, G. Miele, O. Pisanti; “*Constraining neutrino physics with BBN and CMBR*”; *Phys.Rev.* D65 (2002) 023511.

- (20) C.B. Netterfield, P.A.R. Ade, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, K. Coble, C.R. Contaldi, B.P. Crill, P. de Bernardis, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, W.C. Jones, A.E. Lange, L. Martinis, S. Masi, P. Mason, P.D. Mauskopf, **A. Melchiorri**, T. Montroy, E. Pascale, F. Piacentini, D. Pogosyan, F. Pongetti, S. Prunet, G. Romeo, J.E. Ruhl, F. Scaramuzzi; *A measurement by BOOMERANG of multiple peaks in the angular power spectrum of the cosmic microwave background*; *Astrophys.J.* 571 (2002) 604-614.
- (21) Rachel Bean, **Alessandro Melchiorri**; *Current Constraints on the Dark Energy Equation of State*; *Phys.Rev. D* 65 (2002) 041302.
- (22) R. Bowen, S. H. Hansen, **A. Melchiorri**, J. Silk, R. Trotta, *The Impact of an Extra Background of Relativistic Particles on the Cosmological Parameters derived from Microwave Background Anisotropies*; *Mon.Not.Roy.Astron.Soc.* 334 (2002) 760.
- (23) S. Bridle, R. Crittenden, **A. Melchiorri**, M.P. Hobson, R. Kneissl, A. N. Lasenby, *Analytic marginalization over CMB calibration and beam uncertainty*, *MNRAS* 335, 1193 (2002).
- (24) **A. Melchiorri**, J. Silk, *On the Density of Cold Dark Matter*, *Phys.Rev. D* 66 (2002) 041301.
- (25) G. Polenta, P.A.R. Ade, P. de Bernardis, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, K. Coble, C.R. Contaldi, B.P. Crill, G. De Troia, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, W.C. Jones, A.E. Lange, L. Martinis, S. Masi, P. Mason, P.D. Mauskopf, **A. Melchiorri**, T. Montroy, C.B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, F. Pongetti, S. Prunet, G. Romeo, J.E. Ruhl, F. Scaramuzzi, *Search for non-gaussian signals in the BOOMERanG maps I: pixel-space analysis*, *ApJ* (2001) *Astrophys.J.* 572 (2002) L27-L32.
- (26) N. Aghanim, P. G. Castro, **A. Melchiorri**, J. Silk, *Cosmic Microwave Background anisotropies beyond the third peak*, *Astron.Astrophys.* 393 (2002) 381-388.
- (27) C.J.A.P. Martins, **A. Melchiorri**, R. Trotta, R. Bean, G. Rocha, P.P. Avelino, P.T.P. Viana, *Measuring α in the Early Universe: CMB Temperature, Large-Scale Structure and Fisher Matrix Analysis.*, *Phys.Rev. D* 66 (2002) 023505.
- (28) Asantha Cooray, **Alessandro Melchiorri**, *Small Angular Scale CMB Anisotropies: Early Universe or Local structures ?*, *Phys.Rev. D* 66 (2002) 083001.
- (29) Asantha Cooray, **Alessandro Melchiorri**, Joseph Silk, *Is the Cosmic Microwave Background Circularly Polarized?*, *Phys.Lett. B* 554 (2003) 1-6.
- (30) Carolina J. Odman, **Alessandro Melchiorri**, Michael P. Hobson, Anthony N. Lasenby, *Constraining the shape of the CMB: a Peak-by-Peak analysis*, *Phys. Rev. D* 67, 083511 (2003).
- (31) E.S. Battistelli, M. DePetris, L. Lamagna, F. Melchiorri E. Palladino, G. Savini, A. Cooray, **A. Melchiorri**, Y. Rephaeli, M. Shimon, *Cosmic Microwave Background Temperature at Galaxy Clusters*, *Astrophysical Journal Letters*, 580, L101
- (32) **A. Melchiorri**, C. Odman, *Cosmological Parameters from Cosmic Microwave anisotropies: Status and Prospects.*, to appear in *Astrophysics and Space Science*, Kluwer (in press).
- (33) **A. Melchiorri**, C. Odman, *The inflationary Gravity waves in light of recent CMB data*, *Phys.Rev. D* 67 (2003) 021501.
- (34) L. Covi, D. H. Lyth, **A. Melchiorri**, *New Constraints on the Running Mass Inflation Model*, *Phys.Rev. D* 67 (2003) 043507.
- (35) **A. Melchiorri**, L. Mersini, C. Odman, M. Trodden, *The State of the Dark Energy equation of State*, *Phys.Rev. D* 68 (2003) 043509.
- (36) **A. Melchiorri**, P. Bode, N. A. Bahcall, J. Silk, *Cosmological Constraints from a Combined Analysis of the Cluster Mass Function and Microwave Background Anisotropies*, *Astrophys.J.* 586 (2003) L1-L3.
- (37) J. E. Ruhl, P. A. R. Ade, J. J. Bock, J. R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B. P. Crill, P. de Bernardis, G. De Troia, K. Ganga, M. Giacometti, E. Hivon, V. V. Hristov, A. Iacoangeli, A. H. Jaffe, W. C. Jones, A. E. Lange, S. Masi, P. Mason, P. D. Mauskopf, **A. Melchiorri**, T. Montroy, C. B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, G. Romeo, *Improved Measurement of the Angular Power Spectrum of Temperature Anisotropy in the CMB from Two New Analyses of BOOMERANG Observations*, *Astrophys.J.* 599 (2003) 786-805.

- (38) K. Coble, P.A.R. Ade, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, C. R. Contaldi, B.P. Crill, P. de Bernardis, P. Farese, K. Ganga, M. Giacometti, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, W. C. Jones, A.E. Lange, L. Martinis, S. Masi, P. Mason, P.D. Mauskopf, **A. Melchiorri**, T. Montroy, C.B. Netterfield, L. Nyman, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, F. Pongetti, S. Prunet, G. Romeo, J.E. Ruhl, F. Scaramuzzi, *Observations of Galactic and Extra-galactic Sources From the BOOMERANG and SEST Telescopes*, Astrophysical Journal, Submitted (2002).
- (39) Ignacio Ferreras, **Alessandro Melchiorri**, Domenico Tocchini-Valentini, *Using bright ellipticals as dark energy cosmic clocks*, Mon.Not.Roy.Astron.Soc. 344 (2003) 257.
- (40) C.J.A.P. Martins, **A. Melchiorri**, G. Rocha, R. Trotta, P.P. Avelino, P. Viana, *WMAP Constraints on varying α and the Promise of Reionization*, Phys.Lett. B585 (2004) 29-34.
- (41) **Alessandro Melchiorri**, Carolina Odman, *Current constraints on Cosmological Parameters from Microwave Background Anisotropies*, Phys. Rev. D 67, 081302(R) (2003).
- (42) E.S. Battistelli, M. De Petris, L. Lamagna, G. Luzzi, R. Maoli, **A. Melchiorri**, F. Melchiorri, A. Orlando, E. Palladino, G. Savini, Y. Rephaeli, M. Shimon, M. Signore, S. Colafrancesco, *Triple Experiment Spectrum of the Sunyaev-Zeldovich Effect in the Coma Cluster: H_0* , Astrophys. J. 598 (2003) L75-L78.
- (43) William H. Kinney, Edward W. Kolb, **Alessandro Melchiorri**, Antonio Riotto, *WMAPing inflationary physics*, Phys.Rev. D69 (2004) 103516.
- (44) Rachel Bean, **Alessandro Melchiorri**, Joe Silk, *Recombining WMAP: constraints on ionizing and resonance radiation at recombination*, Phys.Rev. D68 (2003) 083501.
- (45) G. Rocha, R. Trotta, C.J.A.P. Martins, **A. Melchiorri**, P.P. Avelino, P.T.P. Viana, *New constraints on varying α* , New Astron.Rev. 47 (2003) 863-869
- (46) G. Rocha, R. Trotta, C.J.A.P. Martins, **A. Melchiorri**, P.P. Avelino, R. Bean, P.T.P. Viana, *Measuring α in the Early Universe: CMB Polarization, Reionization and the Fisher Matrix Analysis*, MNRAS, 352, 20, 2004.
- (47) L. Conversi, **A. Melchiorri**, L. Mersini, J. Silk, *Are Domain Walls Ruled Out ?*, Astropart.Phys. 21 (2004) 443-449.
- (48) Carolina Odman, Mike Hobson, Anthony Lasenby, **Alessandro Melchiorri**, *Cosmological parameter estimation with large scale structure and supernovae data*, Int.J.Mod.Phys. D13 (2004) 1661-1668.
- (49) **A. Melchiorri**, N. Vittorio; *"Polarization of the Microwave Background: theoretical framework"*; The Cosmic Microwave Background, Kluwer Academic Press; Edited by C.H. Lineweaver, J.G. Bartlett, A. Blanchard, M. Signore, and J. Silk, p.419, (1997).
- (50) **A. Melchiorri**, Louise M. Griffiths; *"From Anisotropy to Omega"*; New Astronomy Reviews, 45, Issue 4-5, 321-328, 2001.
- (51) R. Durrer, M. Kunz, **A. Melchiorri**; *Cosmological Structure Formation with Topological Defects*; Phys.Rept. 364 (2002) 1-81.
- (52) T. Montroy, P.A.R. Ade, A. Balbi, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, P. Cabella, C.R. Contaldi, B.P. Crill, P. de Bernardis, G. De Gasperis, A. de Oliveira-Costa, G. De Troia, G. di Stefano, K. Ganga, E. Hivon, V.V. Hristov, A. Iacoangeli, A.H. Jaffe, T.S. Kisner, W.C. Jones, A.E. Lange, S. Masi, P.D. Mauskopf, C. MacTavish, **A. Melchiorri**, F. Nati, P. Natoli, C.B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, S. Ricciardi, G. Romeo, J.E. Ruhl, E. Torbet, M. Tegmark, N. Vittorio, *Measuring CMB polarization with BOOMERANG* New Astronomy Reviews, 47, 1059, 2003.
- (53) P. Mauskopf et al., *BOOMERANG returns*, New Astronomy Reviews, 47, 733, 2003.
- (54) G. Fogli, E. Lisi, A. Marrone, **A. Melchiorri**, A. Palazzo, P. Serra, J. Silk, *Observables sensitive to absolute neutrino masses: Constraints and correlations from world neutrino data*, Phys. Rev. D 70, 113003 (2004).
- (55) Laura Covi, David H. Lyth, **Alessandro Melchiorri**, Carolina J. Odman, *Running-mass inflation model and WMAP*, Phys. Rev. D 70, 123521 (2004)
- (56) R. Trotta, **A. Melchiorri**, *Indication for Primordial Anisotropies in the Neutrino Background from WMAP and SDSS*, Phys.Rev.Lett. 95 (2005) 011305.
- (57) P.S. Corasaniti, T. Giannantonio, **A. Melchiorri**, *Constraining dark energy with cross-correlated CMB and Large Scale Structure data*, Phys.Rev. D71 (2005) 123521.

- (58) A. Cooray, P.S. Corasaniti, T. Giannantonio, **A. Melchiorri**, *An indirect limit on the amplitude of primordial Gravitational Wave Background from CMB-Galaxy Cross Correlation*, Phys.Rev. D71 (2005) 123521.
- (59) **A. Melchiorri**, G. Fogli, E. Lisi, A. Marrone, A. Palazzo, P. Serra, J. Silk, *Constraints on the Sum of Neutrino Masses from Cosmology and their impact on world neutrino data*, Nuclear Physics B Supplement, Volume 145, p. 290-294, 2005
- (60) **A. Melchiorri**, T. Roy Choudhury, P. Serra, A. Ferrara, *A very extended reionization epoch ?*, Monthly Notices of the Royal Astronomical Society, Volume 364, Issue 3, pp. 873-878, (2005).
- (61) W. C. Jones, P. Ade, J. Bock, J. Bond, J. Borrill, A. Boscaleri, P. Cabella, C. Contaldi, B. Crill, P. de Bernardis, G. De Gasperis, A. de Oliveira-Costa, G. De Troia, G. Di Stefano, E. Hivon, A. Jaffe, T. Kisner, A. Lange, C. MacTavish, S. Masi, P. Matuskopf, **A. Melchiorri**, T. Montroy, P. Natoli, B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, S. Ricciardi, G. Romeo, J. Ruhl, P. Santini, M. Tegmark, M. Veneziani, N. Vittorio, *A Measurement of the Angular Power Spectrum of the CMB Temperature Anisotropy from the 2003 Flight of Boomerang*, The Astrophysical Journal, 647:823-832, 2006.
- (62) C. MacTavish, P. Ade, J. Bock, J. Bond, J. Borrill, A. Boscaleri, P. Cabella, C. Contaldi, B. Crill, P. de Bernardis, G. De Gasperis, A. de Oliveira-Costa, G. De Troia, G. Di Stefano, E. Hivon, A. Jaffe, T. Kisner, A. Lange, S. Masi, P. Matuskopf, **A. Melchiorri**, T. Montroy, P. Natoli, B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, S. Ricciardi, G. Romeo, J. Ruhl, P. Santini, M. Tegmark, M. Veneziani, N. Vittorio, *Cosmological Parameters from the 2003 flight of BOOMERANG*, The Astrophysical Journal, 647:799-812, 2006.
- (63) F. Piacentini, P. Ade, J. Bock, J. Bond, J. Borrill, A. Boscaleri, P. Cabella, C. Contaldi, B. Crill, P. de Bernardis, G. De Gasperis, A. de Oliveira-Costa, G. De Troia, G. Di Stefano, E. Hivon, A. Jaffe, T. Kisner, A. Lange, C. MacTavish, S. Masi, P. Matuskopf, **A. Melchiorri**, T. Montroy, P. Natoli, B. Netterfield, E. Pascale, D. Pogosyan, G. Polenta, S. Prunet, S. Ricciardi, G. Romeo, J. Ruhl, P. Santini, M. Tegmark, M. Veneziani, N. Vittorio, *A measurement of the polarization-temperature angular cross power spectrum of the Cosmic Microwave Background from the 2003 flight of BOOMERANG*, The Astrophysical Journal, 647:833-839, 2006.
- (64) T. Montroy, P. Ade, J. Bock, J. Bond, J. Borrill, A. Boscaleri, P. Cabella, C. Contaldi, B. Crill, P. de Bernardis, G. De Gasperis, A. de Oliveira-Costa, G. De Troia, G. Di Stefano, E. Hivon, A. Jaffe, T. Kisner, A. Lange, C. MacTavish, S. Masi, P. Matuskopf, **A. Melchiorri**, T. Montroy, P. Natoli, B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G. Polenta, S. Prunet, S. Ricciardi, G. Romeo, J. Ruhl, P. Santini, M. Tegmark, M. Veneziani, N. Vittorio, *A Measurement of the CMB EE Spectrum from the 2003 Flight of BOOMERANG*, The Astrophysical Journal, 647:813-822, 2006.
- (65) Anze Slosar, **Alessandro Melchiorri**, Joseph Silk, *Did Boomerang hit MOND?*, Physical Review D, vol. 72, Issue 10, id. 101301 (2005).
- (66) Asantha Cooray, **Alessandro Melchiorri**, *Searching for integrated Sachs Wolfe effect beyond temperature anisotropies: CMB E-mode polarization galaxy cross-correlation*, Journal of Cosmology and Astroparticle Physics, Issue 01, pp. 018 (2006).
- (67) Tommaso Giannantonio, **Alessandro Melchiorri**, *Chaplygin gas in light of recent integrated Sachs-Wolfe effect data*, Classical and Quantum Gravity, Volume 23, Issue 12, pp. 4125-4132 (2006).
- (68) W. Kinney, E. Kolb, **A. Melchiorri**, A. Riotto, *Inflation model constraints from the Wilkinson Microwave Anisotropy Probe three-year data*, Physical Review D, vol. 74, Issue 2, id. 023502 (2006).
- (69) S. Dodelson, **A. Melchiorri**, A. Slosar, *Is cosmology compatible with sterile neutrinos?*, Phys.Rev.Lett. 97 (2006) 04301.
- (70) F. De Bernardis, E. Giusarma, **A. Melchiorri**, *Constraints on Distance Duality Relation from Sunyaev Zel'dovich Effect and Chandra X-ray measurements*, Int.J.Mod.Phys. D15 (2006) 759-766.
- (71) G. Mangano, **A. Melchiorri**, P. Serra, A. Cooray, M. Kamionkowski, *Cosmological bounds on dark matter-neutrino interactions*, Phys. Rev. D 74, 043517 (2006).
- (72) L. Covi, J. Hamann, **A. Melchiorri**, A. Slosar, I. Sorbera, *Inflation and WMAP three year data: Features have a Future!*, eprint arXiv:astro-ph/0606452, Phys. Rev. D 74, 083509 (2006).
- (73) G.L. Fogli, E. Lisi, A. Marrone, **A. Melchiorri**, A. Palazzo, P. Serra, J. Silk, A. Slosar, *Observables sensitive to absolute neutrino masses: A reappraisal after WMAP-3y and first MINOS results*, eprint arXiv:hep-ph/0608060, Phys.Rev. D75 (2007) 053001.
- (74) Axel De La Macorra, **Alessandro Melchiorri**, Paolo Serra, Rachel Bean, *The impact of neutrino masses on the determination of dark energy properties*, eprint arXiv:astro-ph/0608351, Astroparticle Physics 27 (2007) 406-410.

- (75) **Alessandro Melchiorri**, Barbara Paciello, Paolo Serra, Anze Slosar, *Constraints on Dynamical Dark Energy: an update*, New J. Phys. 8 325, 2006.
- (76) Brett C. Friedman, Asantha Cooray, **Alessandro Melchiorri**, *WMAP-normalized Inflationary Model Predictions and the Search for Primordial Gravitational Waves with Direct Detection Experiments*, eprint arXiv:astro-ph/0610220. Physical Review D, vol. 74, Issue 12, id. 123509, (2006).
- (77) **Alessandro Melchiorri**, Scott Dodelson, Paolo Serra, Anze Slosar, *New Constraints on Neutrino Physics from Cosmology*, New Astronomy Reviews, New Astronomy Reviews, Volume 50, Issue 11-12, p. 1020-1024, (2006).
- (78) **Alessandro Melchiorri**, Paolo Serra, *Anisotropies in the neutrino background: An update*, Physical Review D, vol. 74, Issue 12, id. 127301, 2006.
- (79) Rachel Bean, **Alessandro Melchiorri**, Joseph Silk, *Cosmological constraints in the presence of ionizing and resonance radiation at recombination*, eprint:astro-ph/0701224, Phys.Rev. D75 (2007) 063505.
- (80) Pierstefano Corasaniti, **Alessandro Melchiorri**, Dragan Huterer, *Exploring the Dark Energy Redshift Desert with the Sandage-Loeb Test*, eprint:astro-ph/0701433, Phys.Rev. D75 (2007) 062001.
- (81) G. Mangano, **A. Melchiorri**, O. Mena, G. Miele, A. Slosar, *Present bounds on the relativistic energy density in the Universe from cosmological observables*, eprint:astro-ph/0612150, JCAP 0703 (2007) 006.
- (82) P. Serra, A. Heavens, **A. Melchiorri**, *Bayesian Evidence for a Cosmological Constant using new High-Redshift Supernovae Data*, eprint: astro-ph/0701338, MNRAS, 379, 1,169, 2007.
- (83) J. Hamann, L. Covi, **A. Melchiorri**, A. Slosar, *New Constraints on Oscillations in the Primordial Spectrum of Inflationary Perturbations*, eprint arXiv:astro-ph/0701380, Phys. Rev. D 76, 023503 (2007)
- (84) **A. Melchiorri**, A. Polosa, A. Strumia, *New bounds on millicharged particles from cosmology*, eprint arXiv:hep-ph/0703144, Physics Letters B, 650, 5-6, 416-420, 2007.
- (85) R. Caldwell, A. Cooray, **A. Melchiorri**, *Constraints on a New Post-General Relativity Cosmological Parameter*, eprint arXiv:astro-ph/0703375, Phys. Rev. D 76, 023507 (2007).
- (86) G. De Troia, P.A.R. Ade, J.J. Bock, J.R. Bond, J. Borrill, A. Boscaleri, P. Cabella, C.R. Contaldi, B.P. Crill, P. de Bernardis, G. De Gasperis, A. de Oliveira-Costa, G. Di Stefano, P. G. Ferreira, E. Hivon, A.H. Jaffe, T.S.Kisner, M. Kunz, W.C. Jones, A.E. Lange, M.Liguori, S. Masi, S. Matarrese, P.D. Mauskopf, C.J. MacTavish, **A. Melchiorri**, T.E. Montroy, P. Natoli, C.B. Netterfield, E. Pascale, F. Piacentini, D. Pogosyan, G.Polenta, S. Prunet, S. Ricciardi, G. Romeo, J.E. Ruhl, P. Santini, M. Tegmark, M. Veneziani, N. Vittorio, *Searching for non Gaussian signals in the BOOMERanG 2003 CMB maps*, eprint arXiv:0705.1615, The Astrophysical Journal, Volume 670, Issue 2, pp. L73-L76.
- (87) **A. Melchiorri**, O. Mena, A. Slosar, *An improved cosmological bound on the thermal axion mass*, eprint arXiv:0705.2695, Phys. Rev. D 76, 041303(R) (2007)
- (88) **A. Melchiorri**, L. Pagano, S. Pandolfi, *When Did Cosmic Acceleration Start ?*, eprint: arXiv:0706.1314, Phys. Rev. D 76, 041301(R) (2007).
- (89) L. Pagano, A. Cooray, **A. Melchiorri**, M. Kamionkowski, *Red Density Perturbations and Inflationary Gravitational Waves*, eprint arXiv:0707.2560, JCAP, 04, 009, (2008).
- (90) Francesco de Bernardis, **Alessandro Melchiorri**, Licia Verde, Raul Jimenez, *The Cosmic Neutrino Background and the Age of the Universe*, eprint arXiv:0707.4170, JCAP, 03, 020, (2008).
- (91) Pier Stefano Corasaniti, **Alessandro Melchiorri**, *Testing Cosmology with Cosmic Sound Waves*, eprint arXiv:0711.4119, PRD, in press.
- (92) Kazunori Kohri, David H. Lyth, **Alessandro Melchiorri**, *Black hole formation and slow-roll inflation*, eprint arXiv:0711.5006, JCAP, 04, 038, (2008).
- (93) Asantha Cooray, Chao Li, **Alessandro Melchiorri**, *The trispectrum of 21-cm background anisotropies as a probe of primordial non-Gaussianity*, eprint:arXiv:0801.3463, Phys. Rev. D 77, 103506 (2008).
- (94) T. D. Kitching, A. F. Heavens, L. Verde, P. Serra, **A. Melchiorri**, *Finding Evidence for Massive Neutrinos using 3D Weak Lensing*, eprint:arXiv:0801.4565, Phys. Rev. D 77, 103008 (2008).
- (95) Scott F. Daniel, Robert R. Caldwell, Asantha Cooray, **Alessandro Melchiorri**, *Large Scale Structure as a Probe of Gravitational Slip*, eprint:arXiv:0802.1068, Phys. Rev. D 77, 103513 (2008).

- (96) Roberta Camerini, Ruth Durrer, **Alessandro Melchiorri**, Antonio Riotto, *Is Cosmology Compatible with Blue Gravity Waves ?*, eprint:arXiv:0802.1442, Phys. Rev. D 77, 101301(R) (2008).
- (97) Erminia Calabrese, Anze Slosar, **Alessandro Melchiorri**, George F. Smoot, Oliver Zhan, *Cosmic Microwave Weak lensing data as a test for the dark universe*, arXiv:0803.2309, Phys. Rev. D 77, 123531 (2008).
- (98) Jan Hamann, Steen Hannestad, **Alessandro Melchiorri**, Yvonne Y. Y. Wong, *Nonlinear corrections to the cosmological matter power spectrum and scale-dependent galaxy bias: implications for parameter estimation*, arXiv:0804.1789, JCAP0807:017, 2008.
- (99) Francesco De Bernardis, Luca Pagano, Paolo Serra, **Alessandro Melchiorri**, Asantha Cooray, *Anisotropies in the Cosmic Neutrino Background after WMAP 5-year Data*, arXiv:0804.1925, JCAP06(2008)013.
- (101) G.L. Fogli, E. Lisi, A. Marrone, **A. Melchiorri**, A. Palazzo, A.M. Rotunno, P. Serra, J. Silk, A. Slosar, *Observables sensitive to absolute neutrino masses (Addendum)*, arXiv:0805.2517, Phys.Rev.D78:033010, (2008)
- (102) William H. Kinney, Edward W. Kolb, **Alessandro Melchiorri**, Antonio Riotto, *Latest inflation model constraints from cosmic microwave background measurements*, arXiv:0805.2966, Phys.Rev.D78:087302, 2008
- (103) Paolo Serra, Asantha Cooray, Alexandre Amblard, Luca Pagano, **Alessandro Melchiorri**, *Impact of Point Source Clustering on Cosmological Parameters with CMB Anisotropies*, arXiv:0806.1742, Phys.Rev.D78:043004, 2008
- (104) Silvia Galli, Rachel Bean, **Alessandro Melchiorri**, Joseph Silk, *Delayed Recombination and Cosmic Parameters*, arXiv:0807.1420, Phys. Rev. D 78, 063532 (2008)
- (105) Francesco De Bernardis, Paolo Serra, Asantha Cooray, **Alessandro Melchiorri**, *An improved limit on the neutrino mass with CMB and redshift-dependent halo bias-mass relations from SDSS, DEEP2, and Lyman-Break Galaxies*, Phys.Rev.D78:083535, 2008.
- (106) **Alessandro Melchiorri**, Olga Mena, Sergio Palomares-Ruiz, Silvia Pascoli, Anze Slosar, Michel Sorel, *Sterile Neutrinos in Light of Recent Cosmological and Oscillation Data: a Multi-Flavor Scheme Approach*, arXiv:0810.5133, JCAP 0901:036, 2009.
- (107) Francesco De Bernardis, Rachel Bean, Silvia Galli, **Alessandro Melchiorri**, Joseph Silk, Licia Verde, *Delayed Recombination and Standard Rulers*, arXiv:0812.3557, Phys.Rev.D79:043503, 2009.
- (108) Paolo Serra, Asantha Cooray, Scott F. Daniel, Robert Caldwell, **Alessandro Melchiorri**, *Lensed Cosmic Microwave Background Constraints on Post-General Relativity Parameters*, Phys. Rev. D 79, 101301 (R) (2009)
- (109) Scott F. Daniel, Robert R. Caldwell, Asantha Cooray, Paolo Serra, **Alessandro Melchiorri**, *A Multi-Parameter Investigation of Gravitational Slip*, arXiv:0901.0919, Phys.Rev.D80:023532, 2009.
- (110) Giulia Gubitosi, Luca Pagano, Giovanni Amelino-Camelia, **Alessandro Melchiorri**, Asantha Cooray, *A Constraint on Planck-scale Modifications to Electrodynamics with CMB polarization data*, arXiv:0904.3201, JCAP 0908:021, 2009.
- (111) S. Galli, F. Iocco, G. Bertone, **A. Melchiorri**, *CMB constraints on Dark Matter models with large annihilation cross-section*, arXiv:0905.0003, Phys. Rev. D 80, 023505 (2009).
- (112) Luca Pagano, Paolo de Bernardis, Grazia De Troia, Giulia Gubitosi, Silvia Masi, **Alessandro Melchiorri**, Paolo Natoli, Francesco Piacentini, Gianluca Polenta, *CMB Polarization Systematics, Cosmological Birefringence and the Gravitational Waves Background*, arXiv:0905.1651, Phys.Rev.D80:043522, 2009.
- (113) Silvia Galli, **Alessandro Melchiorri**, George F. Smoot, Oliver Zahn, *From Cavendish to PLANCK: Constraining Newton's Gravitational Constant with CMB Temperature and Polarization Anisotropy*, arXiv:0905.1808, Phys.Rev.D80:023508, 2009.
- (114) Matteo Martinelli, **Alessandro Melchiorri**, Luca Amendola, *Cosmological constraints on the Hu-Sawicki modified gravity scenario*, arXiv:0906.2350, Phys.Rev.D79:123516, 2009.
- (115) Erminia Calabrese, Marina Migliaccio, Luca Pagano, Grazia De Troia, **Alessandro Melchiorri**, Paolo Natoli, *New Constraints on the Dark Matter Equation of State*, Physical Review D 80, 6, 063539, (2009).
- (116) Eloisa Menegoni, Silvia Galli, James Bartlett, Carlos Martins, **Alessandro Melchiorri**, *New Constraints on variations of the fine structure constant from CMB anisotropies*, eprint arXiv:0909.3584, Phys. Rev. D 80, 087302 (2009).
- (117) Erminia Calabrese, Asantha Cooray, Matteo Martinelli, **Alessandro Melchiorri**, Luca Pagano, Anze Slosar, George F. Smoot, *CMB lensing constraints on dark energy and modified gravity scenarios*. Phys. Rev. D 80, 103516 (2009)

- (118) Francesco De Bernardis, Thomas D.Kitching, Alan Heavens, **Alessandro Melchiorri**, *Determining the Neutrino Mass Hierarchy with Cosmology*, arXiv:0907.1917, Phys.Rev.D80:123509,2009.
- (119) P. Serra, F. Zalamea, A. Cooray, G. Mangano, **A. Melchiorri**, *Constraints on neutrino – dark matter interactions from cosmic microwave background and large scale structure data*, Phys. Rev. D 81, 043507 (2010).
- (120) Erminia Calabrese, Joseph Smidt, Alexandre Amblard, Asantha Cooray, **Alessandro Melchiorri**, Paolo Serra, Alan Heavens, and Dipak Munshi, *Non-Gaussianity in WMAP data due to the correlation of CMB lensing potential with secondary anisotropies*, Phys. Rev. D 81, 043529 (2010)
- (121) Paolo Serra, Asantha Cooray, Daniel E. Holz, **Alessandro Melchiorri**, Stefania Pandolfi, Devdeep Sarkar, *No Evidence for Dark Energy Dynamics from a Global Analysis of Cosmological Data*, Phys.Rev.D80:121302,2009.
- (122) Tommaso Giannantonio, Matteo Martinelli, Alessandra Silvestri, **Alessandro Melchiorri**. *New constraints on parametrised modified gravity from correlations of the CMB with large scale structure.*, JCAP 1004:030,2010.
- (123) Matteo Martinelli, Laura Lopez Honorez, **Alessandro Melchiorri**, Olga Mena, *Future CMB cosmological constraints in a dark coupled universe.*, Phys. Rev. D 81, 103534 (2010).
- (124) S. Pandolfi, E. Giusarma, M. Lattanzi, **A. Melchiorri**, *Inflation with primordial broken power law spectrum as an alternative to the concordance cosmological model*, Physical Review D, vol. 81, Issue 10, id. 103007, 2010.
- (125) S. Pandolfi, A. Cooray, E. Giusarma, E. W. Kolb, A. Melchiorri, O. Mena, P. Serra, *Harrison-Zel'dovich primordial spectrum is consistent with observations*, PRD 2010, Phys. Rev. D 81, 123509 (2010)
- (126) E. Menegoni, S. Pandolfi, S. Galli, M. Lattanzi, **A. Melchiorri**, *Constraints on the Dark Energy Equation of State in Presence of a Varying Fine Structure Constant*, International Journal of Modern Physics D, Volume 19, Issue 04, pp. 507-512 (2010).
- (127) Antonino Marciano, Giovanni Amelino-Camelia, Nicola Rossano Bruno, Giulia Gubitosi, Gianluca Mandanici, **Alessandro Melchiorri**, *Interplay between curvature and Planck-scale effects in astrophysics and cosmology*, JCAP06(2010)030, 2010.
- (128) Giulia Gubitosi, Giuseppe Genovese, Giovanni Amelino-Camelia, **Alessandro Melchiorri**, *Planck-scale modifications to Electrodynamics characterized by a space-like symmetry-breaking vector*, arXiv:1003.0878, Phys. Rev. D 82, 024013 (2010).
- (129) C.J.A.P. Martins, Eloisa Menegoni, Silvia Galli, Gianpiero Mangano, **Alessandro Melchiorri**, *Varying couplings in the early universe: correlated variations of α and G* , Phys. Rev. D 82, 023532 (2010).
- (130) Francesco De Bernardis, Paolo Serra, Asantha Cooray, **Alessandro Melchiorri**, *Constraints on primordial non-Gaussianity from WMAP7 and Luminous Red Galaxies power spectrum and forecast for future surveys*, Phys. Rev. D 82, 083511 (2010).
- (131) Silvia Galli, Matteo Martinelli, **Alessandro Melchiorri**, Luca Pagano, Blake D. Sherwin, David N. Spergel, *Constraining Fundamental Physics with Future CMB Experiments*, Physical Review D, vol. 82, Issue 12, id. 123504 (2010).
- (132) Stefania Pandolfi, Elena Giusarma, Edward W. Kolb, Massimiliano Lattanzi, **Alessandro Melchiorri**, Olga Mena, Manuel Pena, Asantha Cooray, Paolo Serra, *Impact of general reionization scenarios on extraction of inflationary parameters*, arXiv:1009.5433, Phys. Rev. D 82, 123527 (2010).
- (133) Erminia Calabrese, Roland de Putter, Dragan Huterer, Eric V. Linder, **Alessandro Melchiorri**, *Future CMB Constraints on Early, Cold, or Stressed Dark Energy*, arXiv:1010.5612, Phys. Rev. D 83, 023011 (2011).
- (134) Matteo Martinelli, Erminia Calabrese, Francesco De Bernardis, **Alessandro Melchiorri**, Luca Pagano, Roberto Scaramella, *Constraining Modified Gravity with Euclid*, arXiv:1010.5755, Phys. Rev. D 83, 023012 (2011).
- (135) Maria Archidiacono, Asantha Cooray, **Alessandro Melchiorri**, Stefania Pandolfi, *CMB Neutrino Mass Bounds and Reionization*, Phys. Rev. D 82, 087302 (2010).
- (136) P. Natoli, G. de Troia, C. Hikage, E. Komatsu, M. Migliaccio, P. Ade, J. Bock, J. Bond, J. Borrill, A. Boscaleri, C. Contaldi, B. Crill, P. de Bernardis, G. de Gasperis, A. de Oliveira-Costa, G. di Stefano, E. Hivon, T. S. Kisner, W. Jones, A. Lange, S. Masi, P. Matuszkiewicz, C. J. MacTavish, **A. Melchiorri**, T. E. Montroy, B. Netterfield, E. Pascale, F. Piacentini, G. Polenta, S. Ricciardi, G. Romeo, J. E. Ruhl, M. Tegmark, M. Veneziani, N. Vittorio, *BOOMERanG constraints on primordial non-Gaussianity from analytical Minkowski functionals*, Monthly Notices of the Royal Astronomical Society, Volume 408, Issue 3, pp. 1658-1665, 2010.

- (137) Elena Giusarma, Martina Corsi, Maria Archidiacono, Roland de Putter, **Alessandro Melchiorri**, Olga Mena, Stefania Pandolfi, *Constraints on massive sterile neutrino species from current and future cosmological data*, PRD in press, arXiv:1102.4774, Phys. Rev. D 83, 115023 (2011).
- (138) Erminia Calabrese, Dragan Huterer, Eric V. Linder, **Alessandro Melchiorri**, Luca Pagano, *Limits on Dark Radiation, Early Dark Energy, and Relativistic Degrees of Freedom*, Phys. Rev. D 83, 123504 (2011).
- (139) Maria Archidiacono, Francesco De Bernardis, Asantha Cooray, Alexandre Amblard, Paolo Serra, **Alessandro Melchiorri**, *Amplitudes of thermal and kinetic Sunyaev-Zel'dovich signals from small-scale CMB anisotropies*, arXiv:1103.3051, Phys. Rev. D 85, 043015 (2012)
- (140) Francesco De Bernardis, Matteo Martinelli, **Alessandro Melchiorri**, Olga Mena, Asantha Cooray, *Future weak lensing constraints in a dark coupled universe*, arXiv:1104.0652, Phys. Rev. D 84, 023504 (2011).
- (141) Eleonora Di Valentino, **Alessandro Melchiorri**, Luca Pagano, *Testing the Inflationary Null Energy Condition with Current and Future Cosmic Microwave Background Data*, Int.J.Mod.Phys. D20, 1183-1189, (2011).
- (142) Erminia Calabrese, Eloisa Menegoni, C.J.A.P. Martins, **Alessandro Melchiorri**, Graca Rocha, *Constraining Variations in the Fine Structure Constant in the presence of Early Dark Energy*, arXiv:1104.0760, Phys. Rev. D 84, 023518 (2011).
- (143) Silvia Galli, Fabio Iocco, Gianfranco Bertone, **Alessandro Melchiorri**, *Updated CMB constraints on Dark Matter annihilation cross-sections*, arXiv:1106.1528, Phys. Rev. D 84, 027302 (2011).
- (144) K. N. Abazajian, E. Calabrese, A. Cooray, F. De Bernardis, S. Dodelson, A. Friedland, G. M. Fuller, S. Hannestad, B. G. Keating, E. V. Linder, C. Lunardini, **A. Melchiorri**, R. Miquel, E. Pierpaoli, J. Pritchard, P. Serra, M. Takada, Y. Wong, *Cosmological and Astrophysical Neutrino Mass Measurements*, eprint arXiv:1103.5083, Astroparticle Physics Volume 35, Issue 4, November 2011, Pages 177-184, (2011).
- (145) Micol Benetti, Massimiliano Lattanzi, Erminia Calabrese, **Alessandro Melchiorri**, *Features in the primordial spectrum: new constraints from WMAP7+ACT data and prospects for Planck*, arXiv:1107.4992, Phys. Rev. D 84, 063509 (2011).
- (146) Giulia Gubitosi, Marina Migliaccio, Luca Pagano, Giovanni Amelino-Camelia, **Alessandro Melchiorri**, Paolo Natoli, Gianluca Polenta, arXiv:1106.6049, JCAP 003, 1111 (2011).
- (147) Maria Archidiacono, Erminia Calabrese, **Alessandro Melchiorri**, *The case for dark radiation*, arXiv:1109.2767, Phys. Rev. D 84, 123008 (2011).
- (148) Matteo Martinelli, **Alessandro Melchiorri**, Olga Mena, Valentina Salvatelli, Zahara Girones, *Future constraints on the Hu-Sawicki modified gravity scenario*, arXiv:1109.4736, Phys. Rev. D 85, 024006 (2012).
- (149) Stefania Pandolfi, Andrea Ferrara, T.Roy Choudhury, **Alessandro Melchiorri**, Sourav Mitra, *Data-constrained reionization and its effects on cosmological parameters*, arXiv:1111.3570, Phys. Rev. D 84, 123522 (2011)
- (150) Eleonora Di Valentino, Massimiliano Lattanzi, Gianpiero Mangano, **Alessandro Melchiorri**, Pasquale D. Serpico, *Future constraints on neutrino isocurvature perturbations in the curvaton scenario*, arXiv:1111.3810, Phys. Rev. D 85, 043511 (2012)
- (151) Aaron Smith, Maria Archidiacono, Asantha Cooray, Francesco De Bernardis, **Alessandro Melchiorri**, Joseph Smidt, *The Impact of Assuming Flatness in the Determination of Neutrino Properties from Cosmological Data*, arXiv:1112.3006, Phys. Rev. D 85, 123521, (2012).
- (152) Elena Giusarma, Maria Archidiacono, Roland de Putter, **Alessandro Melchiorri**, Olga Mena, *Constraints on massive sterile plus active neutrino species in non minimal cosmologies*, arXiv:1112.4661, Phys. Rev. D 85, 083522 (2012).
- (153) Eloisa Menegoni, Maria Archidiacono, Erminia Calabrese, Silvia Galli, C. J. A. P. Martins, **Alessandro Melchiorri**, *The Fine Structure Constant and the CMB Damping Scale*, Phys. Rev. D 85, 107301, (2012).
- (154) Matteo Martinelli, Eloisa Menegoni, **Alessandro Melchiorri**, *Future constraints on variations of the fine structure constant from combined CMB and weak lensing measurements*, arXiv:1202.4373, Phys. Rev. D 85, 123526, (2012).
- (155) Silvia Galli, James G. Bartlett, **Alessandro Melchiorri**, *Optimizing Observational Strategy for Future Fgas Constraints*, PRD, Phys. Rev. D 86, 043516, arXiv:1203.5538, (2012).

- (156) Emanuele Castorina, Urbano Franca, Massimiliano Lattanzi, Julien Lesgourgues, Gianpiero Mangano, **Alessandro Melchiorri**, Sergio Pastor, *Cosmological lepton asymmetry with a nonzero mixing angle θ_{13}* , arXiv:1204.2510, Phys. Rev. D 86, 023517, (2012).
- (157) Eleonora Di Valentino, **Alessandro Melchiorri**, Valentina Salvatelli, Alessandra Silvestri, *Parametrised modified gravity and the CMB Bispectrum*, Phys. Rev. D 86, 063517, arXiv:1204.5352, (2012).
- (158) Erminia Calabrese, Maria Archidiacono, **Alessandro Melchiorri**, Bharat Ratra, *The impact of a new median statistics H_0 prior on the evidence for dark radiation*, arXiv:1205.6753, Phys. Rev. D 86, 043520, (2012).
- (159) Maria Archidiacono, Elena Giusarma, **Alessandro Melchiorri**, Olga Mena, *Dark Radiation in extended cosmological scenarios*, arXiv:1206.0109, Phys. Rev. D 86, 043509 (2012)
- (160) Maria Archidiacono, Carlo Giunti, Nicolao Fornengo, **Alessandro Melchiorri**, *Testing 3+1 and 3+2 neutrino mass models with cosmology and short baseline experiments*, arXiv:1207.6515, Phys. Rev. D 86, 065028 (2012)
- (161) Micol Benetti, Stefania Pandolfi, Massimiliano Lattanzi, Matteo Martinelli, and **Alessandro Melchiorri**, *Featuring the primordial power spectrum: New constraints on interrupted slow-roll from CMB and LRG data* Phys. Rev. D 87, 023519, (2013)
- (162) Roberta Diamanti, Elena Giusarma, Olga Mena, Maria Archidiacono, **Alessandro Melchiorri**, *Dark radiation and interacting scenarios*, Phys. Rev. D 87, 063509, (2013)
- (163) Andrea Marchini, **Alessandro Melchiorri**, Valentina Salvatelli, Luca Pagano, *Constraints on modified gravity from the Atacama Cosmology Telescope and the South Pole Telescope*, Phys. Rev. D 87, 083527, (2013)
- (164) Maria Archidiacono, Elena Giusarma, **Alessandro Melchiorri**, Olga Mena, *Neutrino and dark radiation properties in light of recent CMB observations*, Phys. Rev. D 87, 103519, (2013)
- (165) Eleonora Di Valentino, Martina Gerbino, **Alessandro Melchiorri**, *Dark radiation and the CMB bispectrum*, Phys. Rev. D 87, 103523, (2013)
- (166) Maria Archidiacono, Nicolao Fornengo, Carlo Giunti, Steen Hannestad, **Alessandro Melchiorri**, *Sterile neutrinos: Cosmology versus short-baseline experiments*, Phys. Rev. D 87, 125034 (2013)
- (167) Eleonora Di Valentino, Silvia Galli, Massimiliano Lattanzi, **Alessandro Melchiorri**, Paolo Natoli, Luca Pagano, and Najla Said, *Tickling the CMB damping tail: Scrutinizing the tension between the Atacama Cosmology Telescope and South Pole Telescope experiments*, Phys. Rev. D 88, 023501, (2013)
- (168) Najla Said, Carlo Baccigalupi, Matteo Martinelli, **Alessandro Melchiorri**, and Alessandra Silvestri, *New constraints on the dark energy equation of state*, Phys. Rev. D 88, 043515, (2013)
- (169) Micol Benetti, Martina Gerbino, William H. Kinney, Edward W. Kolb, Massimiliano Lattanzi, **Alessandro Melchiorri**, Luca Pagano, Antonio Riotto, *Cosmological data and indications for new physics*, JCAP 1310, 030, (2013)
- (170) Vincenzo F. Cardone, Matteo Martinelli, Erminia Calabrese, Silvia Galli, Zhuoyi Huang, Roberto Maoli, **Alessandro Melchiorri**, Roberto Scaramella, *The power spectrum of systematics in cosmic shear tomography and the bias on cosmological parameters*, MNRAS, Vol. 439 202-220, (2014).
- (171) PRISM collaboration, Philippe Andr et al., *PRISM (Polarized Radiation Imaging and Spectroscopy Mission): An Extended White Paper*, JCAP 1402, 006, (2014).
- (172) Eleonora Di Valentino, **Alessandro Melchiorri**, Olga Mena, *Dark radiation sterile neutrino candidates after Planck data*, JCAP 1311, 018, (2013).
- (173) Eleonora Di Valentino, Martina Gerbino, **Alessandro Melchiorri**, *Dark radiation and the CMB bispectrum*, Phys.Rev. D87, 10, 103523, (2013).
- (174) Elena Giusarma, Eleonora Di Valentino, Massimiliano Lattanzi, **Alessandro Melchiorri**, Olga Mena, *Relic Neutrinos, thermal axions and cosmology in early 2014*, Phys.Rev. D90, 043507, (2014).
- (175) Martina Gerbino, Andrea Marchini, Luca Pagano, Laura Salvati, Eleonora Di Valentino, **Alessandro Melchiorri**, *Blue gravity waves from BICEP2?*, Phys.Rev. D90, 4, 047301, (2014).

- (176) Eleonora Di Valentino, Carlo Gustavino, Julien Lesgourgues, Gianpiero Mangano, **Alessandro Melchiorri**, Gennaro Miele, Ofelia Pisanti, *Probing nuclear rates with Planck and BICEP2*, Phys.Rev. D90, 023543, (2014).
- (177) E. Di Valentino, E. Giusarma, M. Lattanzi, **A. Melchiorri**, O. Mena, *Axion cold dark matter: status after Planck and BICEP2*, Phys.Rev. D90, 043534, (2014).
- (178) Eleonora Di Valentino, **Alessandro Melchiorri**, *Planck constraints on neutrino isocurvature density perturbations*, Phys.Rev. D90 8, 083531, (2014).
- (179) Valentina Salvatelli, Najla Said, Marco Bruni, **Alessandro Melchiorri**, David Wands, *Indications of a late-time interaction in the dark sector*, Phys.Rev.Lett. 113, 18, 181301, (2014).
- (180) Laura Salvati, Najla Said, **Alessandro Melchiorri**, *Is Planck data consistent with primordial deuterium measurements?*, Phys.Rev. D90, 10, 103514, (2014).
- (181) Eleonora Di Valentino, **Alessandro Melchiorri**, Joseph Silk, *Beyond six parameters: extending Λ CDM*, Phys.Rev. D92 (2015) no.12, 121302
- (182) Laura Salvati, Luca Pagano, Rossella Consiglio, **Alessandro Melchiorri**, *Cosmological constraints on the neutron lifetime*, JCAP 1603 (2016) no.03, 055.
- (183) Giovanni Cabass, Martina Gerbino, Elena Giusarma, **Alessandro Melchiorri**, Luca Pagano, Laura Salvati, *Constraints on the early and late integrated Sachs-Wolfe effects from the Planck 2015 cosmic microwave background anisotropies in the angular power spectra*, Phys.Rev. D92 (2015) no.6, 063534.
- (184) Martina Gerbino, Massimiliano Lattanzi, **Alessandro Melchiorri**, *ν generation: Present and future constraints on neutrino masses from global analysis of cosmology and laboratory experiments*, Phys.Rev. D93 (2016) no.3, 033001.
- (185) Eleonora Di Valentino, Elena Giusarma, Massimiliano Lattanzi, Olga Mena, **Alessandro Melchiorri**, Joseph Silk, *Cosmological Axion and neutrino mass constraints from Planck 2015 temperature and polarization data*, Phys.Lett. B752 (2016) 182-185.
- (186) Eleonora Di Valentino, **Alessandro Melchiorri**, Joseph Silk, *Cosmological hints of modified gravity?*, Phys.Rev. D93 (2016) no.2, 023513.
- (187) Eleonora Di Valentino, Elena Giusarma, Olga Mena, **Alessandro Melchiorri**, Joseph Silk, *Cosmological limits on neutrino unknowns versus low redshift priors*, Phys.Rev. D93 (2016) no.8, 083527
- (188) Giovanni Cabass, Luca Pagano, Laura Salvati, Martina Gerbino, Elena Giusarma, **Alessandro Melchiorri**, *Updated Constraints and Forecasts on Primordial Tensor Modes*, Phys.Rev. D93 (2016) no.6, 063508.
- (189) Giovanni Cabass, **Alessandro Melchiorri**, Enrico Pajer, *μ distortions or running: A guaranteed discovery from CMB spectrometry*, Phys.Rev. D93 (2016) no.8, 083515
- (190) Laura Salvati, Luca Pagano, Massimiliano Lattanzi, Martina Gerbino, **Alessandro Melchiorri**, *Breaking Be: a sterile neutrino solution to the cosmological lithium problem*, JCAP 1608 (2016) no.08, 022 .
- (191) Eleonora Di Valentino, **Alessandro Melchiorri**, Joseph Silk, *Reconciling Planck with the local value of H_0 in extended parameter space*, Phys.Lett. B761 (2016) 242-246.
- (192) Martina Gerbino, Alessandro Gruppuso, Paolo Natoli, Maresuke Shiraishi, **Alessandro Melchiorri**, *Testing chirality of primordial gravitational waves with Planck and future CMB data: no hope from angular power spectra*, JCAP 1607 (2016) no.07, 044
- (193) Giovanni Cabass, Eleonora Di Valentino, **Alessandro Melchiorri**, Enrico Pajer, Joseph Silk, *Constraints on the running of the running of the scalar tilt from CMB anisotropies and spectral distortions*, Phys.Rev. D94 (2016) no.2, 023523.
- (194) Francesco Capozzi, Eleonora Di Valentino, Eligio Lisi, **Alessandro Melchiorri**, Antonio Palazzo, *Global constraints on absolute neutrino masses and their ordering* e-Print: arXiv:1703.04471, Phys.Rev. D95 (2017) no.9, 096014.
- (195) E. Di Valentino et al., *Exploring Cosmic Origins with CORE: Cosmological Parameters*, e-Print: arXiv:1612.00021, JCAP 1804 (2018) no.04, 017. **Corresponding author.**

- (196) G. De Zotti et al., *Exploring Cosmic Origins with CORE: Extragalactic sources in Cosmic Microwave Background maps*, e-Print: arXiv:1609.07263, JCAP 1804 (2018) no.04, 020.
- (197) C. Burigana et al., *Exploring cosmic origins with CORE: effects of observer peculiar motion*, e-Print: arXiv:1704.05764, JCAP 1804 (2018) no.04, 021.
- (198) F. Finelli et al., *Exploring cosmic origins with CORE: Inflation*, JCAP 1804 (2018) no.04, 016 .
- (199) J. B. Melin et al., *Exploring cosmic origins with CORE: Cluster science*, JCAP 1804 (2018) no.04, 019.
- (200) M. Remazeilles et al., *Exploring cosmic origins with CORE: B-mode component separation*, JCAP 1804 (2018) no.04, 023.
- (201) P. de Bernardis et al., *Exploring cosmic origins with CORE: The instrument*, JCAP 1804 (2018) no.04, 015.
- (202) J. Delabrouille et al., *Exploring cosmic origins with CORE: Survey requirements and mission design*, JCAP 1804 (2018) no.04, 014.
- (203) A. Challinor et al., *Exploring cosmic origins with CORE: Gravitational lensing of the CMB*, JCAP 1804 (2018) no.04, 018.
- (204) P. Natoli et al., *Exploring cosmic origins with CORE: Mitigation of systematic effects*, JCAP 1804 (2018) no.04, 022.
- (205) Eleonora Di Valentino, **Alessandro Melchiorri**, Eric V. Linder, Joseph Silk, *Constraining Dark Energy Dynamics in Extended Parameter Space*, Phys.Rev. D96 (2017) no.2, 023523
- (206) Eleonora Di Valentino, **Alessandro Melchiorri**, Olga Mena, *Can interacting dark energy solve the H_0 tension?*, Phys.Rev. D96 (2017) no.4, 043503.
- (207) Eleonora Di Valentino, Eric V. Linder, **Alessandro Melchiorri**, *Vacuum phase transition solves the H_0 tension*, Phys.Rev. D97 (2018) no.4, 043528.
- (208) Eleonora Di Valentino, **Alessandro Melchiorri**, *First cosmological constraints combining Planck with the recent gravitational-wave standard siren measurement of the Hubble constant*, Phys.Rev. D97 (2018) no.4, 041301.
- (209) Ludovico Capparelli, Eleonora Di Valentino, **Alessandro Melchiorri**, Jens Chluba, *Impact of theoretical assumptions in the determination of the neutrino effective number from future CMB measurements*, Phys.Rev. D97 (2018) no.6, 063519 .
- (210) Eleonora Di Valentino, **Alessandro Melchiorri**, Yabebal Fantaye, Alan Heavens, *Bayesian evidence against the Harrison-Zel'dovich spectrum in tensions with cosmological data sets*, Phys.Rev. D98 (2018) no.6, 063508.
- (211) Eleonora Di Valentino, Daniel E. Holz, **Alessandro Melchiorri**, Fabrizio Renzi, *The cosmological impact of future constraints on the Hubble constant from gravitational-wave standard sirens*, Phys.Rev. D98 (2018) no.8, 083523.
- (212) Fabrizio Renzi, Giovanni Cabass, Eleonora Di Valentino, **Alessandro Melchiorri**, Luca Pagano, *The Impact of Primordial Magnetic Fields on Future CMB Bounds on Inflationary Gravitational Waves*, JCAP 1808 (2018) no.08, 038.
- (213) Fabrizio Renzi, Eleonora Di Valentino, **Alessandro Melchiorri**, *Cornering the Planck Alens anomaly with future CMB data*, Phys.Rev. D97 (2018) no.12, 123534.

Refereed Publications - Planck Collaboration

- (1) N. Mandolesi et al., *Planck pre-launch status: the Planck-LFI programme*, Astronomy and Astrophysics, Volume 520, id.A3, (2010).
- (2) Planck Collaboration, *Planck Early Results: ERCSC Validation and Extreme Radio Sources*, eprint arXiv:1101.1721, Astronomy & Astrophysics, Volume 536, id.A14, (2011).
- (3) Planck Collaboration, *Planck Early Results: The Planck mission*, eprint arXiv:1101.2022, Astronomy & Astrophysics, Volume 536, id.A1 (2011).

- (4) Planck Collaboration, *Planck Early Results: The thermal performance of Planck*, eprint arXiv:1101.2023, Astronomy & Astrophysics, Volume 536, id.A2 (2011).
- (5) Planck Collaboration, *Planck Early Results: The all-sky Early Sunyaev-Zeldovich cluster sample*, eprint arXiv:1101.2024, Astronomy & Astrophysics, Volume 536, id.A8 (2011).
- (6) Planck Collaboration, *Planck early results: XMM-Newton follow-up for validation of Planck cluster candidates*, eprint arXiv:1101.2025, Astronomy & Astrophysics, Volume 536, id.A9 (2011).
- (7) Planck Collaboration, *Planck Early Results: Calibration of the local galaxy cluster Sunyaev-Zeldovich scaling relations*, eprint arXiv:1101.2026, Astronomy & Astrophysics, Volume 536, id.A11, (2011).
- (8) Planck Collaboration, *Planck early results: Cluster Sunyaev-Zeldovich optical scaling relations*, eprint arXiv:1101.2027, Astronomy & Astrophysics, Volume 536, id.A12, (2011).
- (9) Planck Collaboration, *Planck Early Results: The Power Spectrum Of Cosmic Infrared Background Anisotropies*, eprint arXiv:1101.2028, Astronomy & Astrophysics, Volume 536, id.A18, (2011).
- (10) Planck Collaboration, *Planck Early Results: All sky temperature and dust optical depth from Planck and IRAS: Constraints on the "dark gas" in our galaxy*, eprint arXiv:1101.2029, Astronomy & Astrophysics, Volume 536, id.A19, (2011).
- (11) Planck Collaboration, *Planck Early Results: New Light on Anomalous Microwave Emission from Spinning Dust Grains*, eprint arXiv:1101.2031, Astronomy & Astrophysics, Volume 536, id.A20, (2011).
- (12) Planck Collaboration, *Planck Early Results: Properties of the interstellar medium in the Galactic plane*, eprint arXiv:1101.2032, Astronomy & Astrophysics, Volume 536, id.A21, (2011).
- (13) Planck Collaboration, *Planck Early Results: The submillimetre properties of a sample of Galactic cold clumps*, eprint arXiv:1101.2034, Astronomy & Astrophysics, Volume 536, id.A22, (2011).
- (14) Planck Collaboration, *Planck Early Results: The Galactic Cold Core Population revealed by the first all-sky survey*, eprint arXiv:1101.2035, Astronomy & Astrophysics, Volume 536, id.A23, (2011).
- (15) Planck Collaboration, *Planck Early Results: Dust in the diffuse interstellar medium and the Galactic halo*, eprint arXiv:1101.2036, Astronomy & Astrophysics, Volume 536, id.A24, (2011).
- (16) Planck Collaboration, *Planck Early Results: Thermal dust in Nearby Molecular Clouds*, eprint arXiv:1101.2037, Astronomy & Astrophysics, Volume 536, id.A25, (2011).
- (17) A. Mennella et al., *Planck early results: First assessment of the Low Frequency Instrument in-flight performance*, eprint arXiv:1101.2038, Astronomy & Astrophysics, Volume 536, id.A3 (2011).
- (18) A. Zacchei et al., *Planck Early Results: The Low Frequency Instrument data processing*, eprint arXiv:1101.2040, Astronomy & Astrophysics, Volume 536, id.A5 (2011).
- (19) Planck Collaboration, *Planck Early Results: The Early Release Compact Source Catalog*, eprint arXiv:1101.2041, Astronomy & Astrophysics, Volume 536, id.A7 (2011).
- (20) Planck Collaboration, *Planck early results: Statistical analysis of Sunyaev-Zeldovich scaling relations for X-ray galaxy clusters*, eprint arXiv:1101.2043, Astronomy & Astrophysics, Volume 536, id.A10, (2011).
- (21) Planck Collaboration, *Planck Early Results: Statistical properties of extragalactic radio sources in the Planck Early Release Compact Source Catalogue*, eprint arXiv:1101.2044, Astronomy & Astrophysics, Volume 536, id.A13, (2011).
- (22) Planck Collaboration, *Planck Early Results: The Planck View of Nearby Galaxies*, eprint arXiv:1101.2045, Astronomy & Astrophysics, Volume 536, id.A16, (2011).
- (23) Planck Collaboration, *Planck Early Results: Origin of the submm excess dust emission in the Magellanic Clouds*, eprint arXiv:1101.2046, Astronomy & Astrophysics, Volume 536, id.A17, (2011).
- (24) Planck Collaboration, *Planck early results: Spectral energy distributions and radio continuum spectra of northern extragalactic radio sources*, eprint arXiv:1101.2047, Astronomy & Astrophysics, Volume 536, id.A15, (2011).

- (25) Planck Collaboration, *Planck Early Results: Detection with Planck and confirmation by XMM-Newton of PLCK G266.6-27.3, an exceptionally X-ray luminous and massive galaxy cluster at $z \approx 1$* , eprint arXiv:1106.1376, Astronomy & Astrophysics, Volume 536, id.A26, (2011).
- (26) Planck Collaboration, *Planck Intermediate Results. I. Further validation of new Planck clusters with XMM-Newton*, e-print arXiv:1112.5595, Astronomy & Astrophysics, Volume 543, id.A102, (2012).
- (27) Planck Collaboration, *Planck Intermediate Results II: Comparison of Sunyaev-Zeldovich measurements from Planck and from the Arcminute Microkelvin Imager for 11 galaxy clusters*, e-print arXiv:1204.1318, Astron.Astrophys. 550, A128, (2013).
- (28) Planck Collaboration, *Planck intermediate results. III. The relation between galaxy cluster mass and Sunyaev-Zeldovich signal*, e-print arXiv:1204.2743, Astron.Astrophys. 550, A129, (2013).
- (29) Planck Collaboration, *Planck Intermediate Results. IV. The XMM-Newton validation programme for new Planck clusters*, e-print arXiv:1205.3376, Astron.Astrophys. 550, A130, (2013).
- (30) Planck Collaboration, *Planck Intermediate Results. V. Pressure profiles of galaxy clusters from the Sunyaev-Zeldovich effect*, e-print arXiv:1207.4061, Astron.Astrophys. 550, A131, (2013).
- (31) Planck Collaboration, *Planck intermediate results. VI: The dynamical structure of PLCKG214.6+37.0, a Planck discovered triple system of galaxy clusters*, e-print arXiv:1207.4009, Astron.Astrophys. 550, A132, (2013).
- (32) Planck Collaboration, *Planck intermediate results. VII. Statistical properties of infrared and radio extra-galactic sources from the Planck Early Release Compact Source Catalogue at frequencies between 100 and 857 GHz*, e-print arXiv:1207.4706, Astron.Astrophys. 550, A133, (2013).
- (33) Planck Collaboration, *Planck intermediate results. VIII. Filaments between interacting clusters*, e-print arXiv:1208.5911, Astron.Astrophys. 550, A134, (2013).
- (34) Planck Collaboration, *Planck Intermediate Results. IX. Detection of the Galactic haze with Planck*, e-print arXiv:1208.5483, Astron.Astrophys. 554, A139, (2013).
- (35) Planck Collaboration, *Planck Intermediate Results. X. Physics of the hot gas in the Coma cluster*, e-print arXiv:1208.3611, Astron.Astrophys. 554, A140, (2013).
- (36) Planck Collaboration, *Planck Intermediate Results. XI. The gas content of dark matter halos: the Sunyaev-Zeldovich-stellar mass relation for locally brightest galaxies*, e-print arXiv:1212.4131, Astron.Astrophys. 557, A52, (2013).
- (37) Planck Collaboration, *Planck Intermediate Results. XII. Diffuse Galactic components in the Gould Belt System*, e-print arXiv:1301.5839, Astron.Astrophys. 557, A53, (2014).
- (38) Planck Collaboration, *Planck Intermediate Results. XIII. Constraints on peculiar velocities*, Astron.Astrophys. 561, A97, (2014).
- (39) Planck Collaboration, *Planck Intermediate Results. XIV. Dust emission at millimetre wavelengths in the Galactic plane*, e-print arXiv:1307.6815, Astron.Astrophys. 564, A45, (2014).
- (40) Planck Collaboration, *Planck Intermediate Results. XV. A study of anomalous microwave emission in Galactic clouds*, e-print arXiv:1309.1357, Astron.Astrophys. 565, A103, (2014).
- (41) Planck Collaboration, *Planck 2013 Results. I. Overview of products and scientific results*, e-print arXiv:1303.5062, Astron.Astrophys. 571, A1, (2014).
- (42) Planck Collaboration, *Planck 2013 Results. II. The Low Frequency Instrument data processing*, e-print arXiv:1303.5063, Astron.Astrophys. 571, A2, (2014).
- (43) Planck Collaboration, *Planck 2013 Results. III. LFI systematic uncertainties*, e-print arXiv:1303.5064, Astron.Astrophys. 571, A3, (2014).
- (44) Planck Collaboration, *Planck 2013 Results. IV. Low Frequency Instrument beams and window functions*, e-print arXiv:1303.5065, Astron.Astrophys. 571, A4, (2014).
- (45) Planck Collaboration, *Planck 2013 Results. V. LFI calibration*, e-print arXiv:1303.5066, Astron.Astrophys. 571, A5, (2014).

- (46) Planck Collaboration, *Planck 2013 Results. VI. High Frequency Instrument data processing*, e-print arXiv:1303.5067, Astron.Astrophys. 571, A6, (2014).
- (47) Planck Collaboration, *Planck 2013 Results. VII. HFI time response and beams*, e-print arXiv:1303.5068, Astron.Astrophys. 571, A7, (2014).
- (48) Planck Collaboration, *Planck 2013 Results. VIII. HFI photometric calibration and mapmaking*, e-print arXiv:1303.5069, Astron.Astrophys. 571, A8, (2014).
- (49) Planck Collaboration, *Planck 2013 Results. IX. HFI spectral response*, e-print arXiv:1303.5070, Astron.Astrophys. 571, A9, (2014).
- (50) Planck Collaboration, *Planck 2013 Results. X. Energetic particle effects: characterization, removal, and simulation*, e-print arXiv:1303.5071, Astron.Astrophys. 571, A10, (2014).
- (51) Planck Collaboration, *Planck 2013 Results. XII. Component separation*, e-print arXiv:1303.5072, Astron.Astrophys. 571, A12, (2014).
- (52) Planck Collaboration, *Planck 2013 Results. XIII. Galactic CO emission*, e-print arXiv:1303.5073, Astron.Astrophys. 571, A13, (2014).
- (53) Planck Collaboration, *Planck 2013 Results. XIV. Zodiacal emission*, e-print arXiv:1303.5074, Astron.Astrophys. 571, A14, (2014).
- (54) Planck Collaboration, *Planck 2013 Results. XV. CMB power spectra and likelihood*, e-print arXiv:1303.5075, Astron.Astrophys. 571, A15, (2014).
- (55) Planck Collaboration, *Planck 2013 Results. XVI. Cosmological parameters*, e-print arXiv:1303.5076, Astron.Astrophys. 571, A16, (2014).
- (56) Planck Collaboration, *Planck 2013 Results. XVII. Gravitational lensing by large-scale structure*, e-print arXiv:1303.5077, Astron.Astrophys. 571, A17, (2014).
- (57) Planck Collaboration, *Planck 2013 Results. XVIII. Gravitational lensing-infrared background correlation*, Astron.Astrophys. 571, A18, (2014).
- (58) Planck Collaboration, *Planck 2013 Results. XIX. The integrated Sachs-Wolfe effect*, e-print arXiv:1303.5079, Astron.Astrophys. 571, A19, (2014).
- (59) Planck Collaboration, *Planck 2013 Results. XX. Cosmology from Sunyaev-Zeldovich cluster counts*, e-print arXiv:1303.5080, Astron.Astrophys. 571, A20, (2014).
- (60) Planck Collaboration, *Planck 2013 Results. XXI. Cosmology with the all-sky Planck Compton parameter y -map*, e-print arXiv:1303.5081, Astron.Astrophys. 571, A21, (2014).
- (61) Planck Collaboration, *Planck 2013 Results. XXII. Constraints on inflation*, e-print arXiv:1303.5082, Astron.Astrophys. 571, A22, (2014).
- (62) Planck Collaboration, *Planck 2013 Results. XXIII. Isotropy and Statistics of the CMB*, e-print arXiv:1303.5083, Astron.Astrophys. 571, A23, (2014).
- (63) Planck Collaboration, *Planck 2013 Results. XXIV. Constraints on primordial non-Gaussianity*, e-print arXiv:1303.5084, Astron.Astrophys. 571, A24, (2014).
- (64) Planck Collaboration, *Planck 2013 Results. XXV. Searches for cosmic strings and other topological defects*, e-print arXiv:1303.5085, Astron.Astrophys. 571, A25, (2014).
- (65) Planck Collaboration, *Planck 2013 Results. XXVI. Background geometry and topology of the Universe*, e-print arXiv:1303.5086, Astron.Astrophys. 571, A26, (2014).
- (66) Planck Collaboration, *Planck 2013 Results. XXVII. Doppler boosting of the CMB: Eppur si muove*, e-print arXiv:1303.5087, Astron.Astrophys. 571, A27, (2014).
- (67) Planck Collaboration, *Planck 2013 Results. XXVIII. The Planck Catalogue of Compact Sources*, e-print arXiv:1303.5088, Astron.Astrophys. 571, A28, (2014).

- (68) Planck Collaboration, *Planck 2013 Results. XXIX. Planck catalogue of Sunyaev-Zeldovich sources*, e-print arXiv:1303.5089, Astron.Astrophys. 571, A29, (2014).
- (69) Planck Collaboration, *Planck 2013 Results. XXX. Cosmic infrared background measurements and implications for star formation*, e-print arXiv:1309.0382, Astron.Astrophys. 571, A30, (2014).
- (70) Planck Collaboration, *Planck 2013 Results. XI. All sky model for thermal dust emission*, e-print arXiv:1303.5071, Astron.Astrophys. 571, A11, (2014).
- (71) Planck Collaboration, *Planck Intermediate Results. XVI. Profile likelihoods for cosmological parameters*, e-print arXiv:1309.1357, Astron.Astrophys. 566, A54, (2014).
- (72) Planck Collaboration, *Planck Intermediate Results. XVII. Emission of dust in the diffuse interstellar medium from the far-infrared to microwave frequencies*, e-print arXiv:1309.1357, Astron.Astrophys. 566, A55, (2014).
- (73) Planck Collaboration, *Planck Intermediate Results. XXII. Frequency dependence of thermal emission from Galactic dust and polarization*, Astron.Astrophys. 576 (2015) A107
- (74) Planck Collaboration, *Planck Intermediate Results. XIX. An overview of the polarized thermal emission from Galactic dust*, Astron.Astrophys. 576 (2015) A104
- (75) Planck Collaboration, *Planck Intermediate Results. XX. Comparison of polarized thermal emission from Galactic dust with simulations of MHD turbulence*, Astron.Astrophys. 576 (2015) A105
- (76) Planck Collaboration, *Planck Intermediate Results. XXI. Comparison of polarized thermal emission from Galactic dust at 353 GHz with interstellar polarization in the visible*, Astron.Astrophys. 576 (2015) A106.
- (77) Planck Collaboration, *Planck Intermediate Results. XXIII. Galactic plane emission components derived from Planck with ancillary data*, Astron.Astrophys. 580 (2015) A13
- (78) Planck Collaboration, *Planck Intermediate Results. XXIV. Constraints on variations in fundamental constants*, Astron.Astrophys. 580 (2015) A22
- (79) Planck Collaboration, *Planck Intermediate Results. XXIX. All-sky dust modelling with Planck, IRAS, and WISE observations*, Astron.Astrophys. 586 (2016) A132
- (80) Planck Collaboration, *Planck Intermediate Results. XXVIII. Interstellar gas and dust in the Chamaeleon clouds as seen by Fermi LAT and Planck*, Astron.Astrophys. 582 (2015) A31
- (81) Planck Collaboration, *Planck Intermediate Results. XXX. The angular power spectrum of polarized dust emission at intermediate and high Galactic latitudes*, Astron.Astrophys. 586 (2016) A133
- (82) Planck Collaboration, *Planck Intermediate Results. XXXI. Microwave survey of Galactic supernova remnants*, Astron.Astrophys. 586 (2016) A134
- (83) Planck Collaboration, *Planck Intermediate Results. XXXII. The relative orientation between the magnetic field and structures traced by interstellar dust* Astron.Astrophys. 586 (2016) A135
- (84) Planck Collaboration, *Planck Intermediate Results. XXXIII. Signature of the magnetic field geometry of interstellar filaments in dust polarization maps*, Astron.Astrophys. 586 (2016) A136
- (85) Planck Collaboration, *Planck Intermediate Results. XXXIV. The magnetic field structure in the Rosette Nebula*, Astron.Astrophys. 586 (2016) A137.
- (86) Planck Collaboration, *Planck 2013 results. XXXII. The updated Planck catalogue of Sunyaev-Zeldovich sources.*, Astron.Astrophys. 581 (2015) A14.
- (87) BICEP2 and Planck Collaborations, *Joint Analysis of BICEP2/KeckArray and Planck data*, Phys.Rev.Lett. 114 (2015) 101301.
- (88) Planck Collaboration, *Planck 2015 results. I. Overview of products and scientific results.*, e-Print: arXiv:1502.01582, Astron.Astrophys. 594 (2016) A1.
- (89) Planck Collaboration, *Planck 2015 results. II. Low Frequency Instrument data processing.*, e-Print: arXiv:1502.01583, Astron.Astrophys. 594 (2016) A2.

- (90) Planck Collaboration, *Planck 2015 results. IV. Low Frequency Instrument beams and window functions*, e-Print: arXiv:1502.01584, Astron.Astrophys. 594 (2016) A4.
- (91) Planck Collaboration, *Planck 2015 results. VIII. High Frequency Instrument data processing: Calibration and maps*, e-Print: arXiv:1502.01587, Astron.Astrophys. 594 (2016) A8.
- (92) Planck Collaboration, *Planck 2015 results. X. Diffuse component separation: Foreground maps*, e-Print: arXiv:1502.01588, Astron.Astrophys. 594 (2016) A10.
- (93) Planck Collaboration, *Planck 2015 results. XIII. Cosmological parameters*, e-Print: arXiv:1502.01589, Astron.Astrophys. 594 (2016) A13.
- (94) Planck Collaboration, *Planck 2015 results. XIV. Dark energy and modified gravity*, e-Print: arXiv:1502.01590, Astron.Astrophys. 594 (2016) A14.
- (95) Planck Collaboration, *Planck 2015 results. XV. Gravitational lensing*, e-Print: arXiv:1502.01591, Astron.Astrophys. 594 (2016) A15.
- (96) Planck Collaboration, *Planck 2015 results. XVII. Constraints on primordial non-Gaussianity*, e-Print: arXiv:1502.01592, Astron.Astrophys. 594 (2016) A17.
- (97) Planck Collaboration, *Planck 2015 results. XVIII. Background geometry and topology*, e-Print: arXiv:1502.01593, Astron.Astrophys. 594 (2016) A18.
- (98) Planck Collaboration, *Planck 2015 results. XIX. Constraints on primordial magnetic fields*, e-Print: arXiv:1502.01594, Astron.Astrophys. 594 (2016) A19.
- (99) Planck Collaboration, *Planck 2015 results. XXI. The integrated Sachs-Wolfe effect* e-Print: arXiv:1502.01595, Astron.Astrophys. 594 (2016) A21 .
- (100) Planck Collaboration, *Planck 2015 results. XXII. A map of the thermal Sunyaev-Zeldovich effect*, e-Print: arXiv:1502.01596, Astron.Astrophys. 594 (2016) A22.
- (101) Planck Collaboration, *Planck 2015 results. XXIV. Cosmology from Sunyaev-Zeldovich cluster counts* e-Print: arXiv:1502.01597, Astron.Astrophys. 594 (2016) A24.
- (102) Planck Collaboration, *Planck 2015 results. XXVII. The Second Planck Catalogue of Sunyaev-Zeldovich Sources* e-Print: arXiv:1502.01598, Astron.Astrophys. 594 (2016) A27 .
- (103) Planck Collaboration, *Planck 2015 results. VII. HFI TOI and beam processing*, e-Print: arXiv:1502.01586, Astron.Astrophys. 594 (2016) A7.
- (104) Planck Collaboration, *Planck 2015 results. XXVIII. The Planck Catalogue of Galactic Cold Clumps*, e-Print: arXiv:1502.01599, Astron.Astrophys. 594 (2016) A28.
- (105) Planck Collaboration, *Planck 2015 results. XX. Constraints on inflation*, e-Print: arXiv:1502.02114, Astron.Astrophys. 594 (2016) A20.
- (106) Planck Collaboration, *Planck intermediate results. XXXV. Probing the role of the magnetic field in the formation of structure in molecular clouds*, Astron.Astrophys. 586 (2016) A138.
- (107) Planck Collaboration, *Planck 2015 results. IX. Diffuse component separation: CMB maps* e-Print: arXiv:1502.05956, Astron.Astrophys. 594 (2016) A9.
- (108) Planck Collaboration, *Planck intermediate results. XXVII. High-redshift infrared galaxy overdensity candidates and lensed sources discovered by Planck and confirmed by Herschel-SPIRE*, Astron.Astrophys. 582 (2015) A30.
- (109) Planck Collaboration, *Planck intermediate results. XXXVII. Evidence of unbound gas from the kinetic Sunyaev-Zeldovich effect*, Astron.Astrophys. 586 (2016) A140.
- (110) Planck Collaboration, *Planck intermediate results - XXXVI. Optical identification and redshifts of Planck SZ sources with telescopes at the Canary Islands observatories*, Astron.Astrophys. 586 (2016) A139.
- (111) Planck Collaboration, *Planck intermediate results. XXXVIII. E- and B-modes of dust polarization from the magnetized filamentary structure of the interstellar medium*, Astron.Astrophys. 586 (2016) A141.

- (112) Planck Collaboration, *Planck 2015 results. V. LFI calibration*, e-Print: arXiv:1505.08022, Astron.Astrophys. 594 (2016) A5.
- (113) Planck Collaboration, *Planck 2015 results. XXV. Diffuse low-frequency Galactic foregrounds*, e-Print: arXiv:1506.06660, Astron.Astrophys. 594 (2016) A25.
- (114) Planck Collaboration, *Planck 2015 results. XVI. Isotropy and statistics of the CMB*, e-Print: arXiv:1506.07135, Astron.Astrophys. 594 (2016) A16.
- (115) Planck Collaboration, *Planck 2015 results. XXVI. The Second Planck Catalogue of Compact Sources*, e-Print: arXiv:1507.02058, Astron.Astrophys. 594 (2016) A26 .
- (116) Planck Collaboration, *Planck 2015 results. XI. CMB power spectra, likelihoods, and robustness of parameters*, e-Print: arXiv:1507.02704, Astron.Astrophys. 594 (2016) A11.
- (117) Planck Collaboration, *Planck 2015 results. XII. Full Focal Plane simulations*, e-Print: arXiv:1509.06348, Astron.Astrophys. 594 (2016) A12.
- (118) Planck Collaboration, *Planck 2015 results. XXIII. The thermal Sunyaev-Zeldovich effect–cosmic infrared background correlation*, e-Print: arXiv:1509.06555, Astron.Astrophys. 594 (2016) A23.
- (119) Planck Collaboration, *Planck intermediate results. XL. The Sunyaev-Zeldovich signal from the Virgo cluster*, e-Print: arXiv:1511.05156, Astron.Astrophys. 596 (2016) A101.
- (120) Planck Collaboration, *Planck intermediate results. XLI. A map of lensing-induced B-modes*, e-Print: arXiv:1512.02882, Astron.Astrophys. 596 (2016) A102.
- (121) Planck Collaboration, *Planck intermediate results. XLII. Large-scale Galactic magnetic fields*, e-Print: arXiv:1601.00546, Astron.Astrophys. 596 (2016) A103.
- (122) Planck Collaboration, *Planck intermediate results. XLIII. The spectral energy distribution of dust in clusters of galaxies*, e-Print: arXiv:1603.04919, Astron.Astrophys. 596 (2016) A104.
- (123) Planck Collaboration, *Planck intermediate results. XLIV. The structure of the Galactic magnetic field from dust polarization maps of the southern Galactic cap*, e-Print: arXiv:1604.01029, Astron.Astrophys. 596 (2016) A105.
- (124) Planck Collaboration, *Planck 2016 intermediate results. XLVI. Reduction of large-scale systematic effects in HFI polarization maps and estimation of the reionization optical depth.*, e-Print: arXiv:1605.02985, Astron.Astrophys. 596 (2016) A107.
- (125) Planck Collaboration, *Planck 2016 intermediate results. XLVII. Planck constraints on reionization history*, arXiv:1605.03507, Astron.Astrophys. 596 (2016) A108.
- (126) Planck Collaboration, *Planck intermediate results. XLIX. Parity-violation constraints from polarization data*, Astron.Astrophys. 596 (2016) A110.
- (127) Planck Collaboration, *Planck intermediate results. XLVIII. Disentangling Galactic dust emission and cosmic infrared background anisotropies*, Astron.Astrophys. 596 (2016) A109.
- (128) Planck Collaboration, *Planck intermediate results - L. Evidence of spatial variation of the polarized thermal dust spectral energy distribution and implications for CMB B-mode analysis*, Astron.Astrophys. 599 (2017) A51.
- (129) Planck Collaboration, *Planck intermediate results - XLV. Radio spectra of northern extragalactic radio sources*, Astron.Astrophys. 596 (2016) A106.

16 Selected publications from 1/1/2008

- (1) William H. Kinney, Edward W. Kolb, **Alessandro Melchiorri**, Antonio Riotto, *Latest inflation model constraints from cosmic microwave background measurements*, arXiv:0805.2966, Phys.Rev.D78:087302,2008
- (2) S. Galli, F. Iocco, G. Bertone, **A. Melchiorri**, *CMB constraints on Dark Matter models with large annihilation cross-section*, arXiv:0905.0003, Phys. Rev. D 80, 023505 (2009). **PhD supervisor of S. Galli**
- (3) **Alessandro Melchiorri**, Olga Mena, Sergio Palomares-Ruiz, Silvia Pascoli, Anze Slosar, Michel Sorel, *Sterile Neutrinos in Light of Recent Cosmological and Oscillation Data: a Multi-Flavor Scheme Approach*, arXiv:0810.5133, JCAP 0901:036,2009.
- (4) Erminia Calabrese, Dragan Huterer, Eric V. Linder, **Alessandro Melchiorri**, Luca Pagano, *Limits on Dark Radiation, Early Dark Energy, and Relativistic Degrees of Freedom*, Phys. Rev. D 83, 123504 (2011). **PhD supervisor of E. Calabrese and L. Pagano.**
- (5) Maria Archidiacono, Erminia Calabrese, **Alessandro Melchiorri**, *The case for dark radiation*, arXiv:1109.2767, Phys. Rev. D 84, 123008 (2011). **PhD supervisor of M. Archidiacono and E. Calabrese.**
- (6) Maria Archidiacono, Carlo Giunti, Nicolao Fornengo, **Alessandro Melchiorri**, *Testing 3+1 and 3+2 neutrino mass models with cosmology and short baseline experiments*, arXiv:1207.6515, Phys. Rev. D 86, 065028 (2012). **PhD supervisor of M. Archidiacono.**
- (7) Maria Archidiacono, Nicolao Fornengo, Carlo Giunti, Steen Hannestad, **Alessandro Melchiorri**, *Sterile neutrinos: Cosmology versus short-baseline experiments*, Phys. Rev. D 87, 125034 (2013). **PhD supervisor of M. Archidiacono.**
- (8) Eleonora Di Valentino, **Alessandro Melchiorri**, Olga Mena, *Dark radiation sterile neutrino candidates after Planck data*, JCAP 1311, 018, (2013). **PhD supervisor of E. Di Valentino.**
- (9) Valentina Salvatelli, Najla Said, Marco Bruni, **Alessandro Melchiorri**, David Wands, *Indications of a late-time interaction in the dark sector*, Phys.Rev.Lett. 113, 18, 181301, (2014). **PhD supervisor of V. Salvatelli and N. Said.**
- (10) Eleonora Di Valentino, **Alessandro Melchiorri**, Joseph Silk, *Beyond six parameters: extending Λ CDM*, Phys.Rev. D92 (2015) no.12, 121302
- (11) Giovanni Cabass, **Alessandro Melchiorri**, Enrico Pajer, *μ distortions or running: A guaranteed discovery from CMB spectrometry*, Phys.Rev. D93 (2016) no.8, 083515. **PhD supervisor of G. Cabass.**
- (12) Eleonora Di Valentino, **Alessandro Melchiorri**, Joseph Silk, *Cosmological hints of modified gravity?*, Phys.Rev. D93 (2016) no.2, 023513.
- (13) Eleonora Di Valentino, **Alessandro Melchiorri**, Joseph Silk, *Reconciling Planck with the local value of H_0 in extended parameter space*, Phys.Lett. B761 (2016) 242-246.
- (14) Francesco Capozzi, Eleonora Di Valentino, Eligio Lisi, **Alessandro Melchiorri**, Antonio Palazzo, *Global constraints on absolute neutrino masses and their ordering*, e-Print: arXiv:1703.04471, Phys.Rev. D95 (2017) no.9, 096014.
- (15) Eleonora Di Valentino, **Alessandro Melchiorri**, Eric V. Linder, Joseph Silk, *Constraining Dark Energy Dynamics in Extended Parameter Space*, Phys.Rev. D96 (2017) no.2, 023523
- (16) Eleonora Di Valentino, **Alessandro Melchiorri**, Olga Mena, *Can interacting dark energy solve the H_0 tension?*, Phys.Rev. D96 (2017) no.4, 043503.

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