

Curriculum Vitae

António Cardoso

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Work Experience

- 2013 - 2014 • **African Institute for Mathematical Sciences, Cape Town, South Africa**
Researcher and Physics Tutor
Research field: Foundations of Quantum Mechanics
- 2012 • **Sandema Senior High/Tech School, Sandema, Ghana**
Visiting Physics Teacher
- 2011 - 2013 • **Simply Learning Tuition, London, United Kingdom**
Maths and Physics Tutor
- 2010 - 2011 • **School of Physics and Astronomy, University of Nottingham, United Kingdom and Centre for Astronomy and Astrophysics, University of Lisbon, Portugal**
Postdoctoral Researcher
Research field: Quantum Cosmology
Supervisors: Prof. Ed Copeland and Prof. José Pedro Mimoso
- 2003 - 2005 • **Center for Nuclear Physics, University of Lisbon, Portugal**
Assistant Researcher
Research field: Baryogenesis
Supervisor: Prof. Luís Bento

Education

- 2008 - 2009 • **Center for Cosmology and Particle Physics, New York University, USA**
Visiting PhD Student
Research field: String Theory Landscape
Supervisor: Prof. Matthew Kleban
- 2006 - 2007 • **Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa**
Visiting PhD Student
Research field: Dark Energy
Supervisor: Prof. Bruce A. Bassett
- 2005 - 2009 • **Institute of Cosmology and Gravitation, University of Portsmouth, United Kingdom**
PhD Student
Research field: Cosmology
Supervisor: Prof. David Wands

Education (continued)

1999 - 2004 • **Faculty of Sciences, University of Lisbon, Portugal**
BSc/MSc in Physics

Publications

- 2009 • **A. Cardoso**, “Cosmological Dynamics and Observational Constraints,” University of Portsmouth
- 2008 • **T. Cailleteau, A. Cardoso, K. Vandersloot and D. Wands**, “Singularities in loop quantum cosmology,” *Phys. Rev. Lett.* **101** (2008) 251302 [arXiv:0808.0190 [gr-qc]]
- 2008 • **A. Cardoso and D. Wands**, “Generalised perturbation equations in bouncing cosmologies,” *Phys. Rev. D* **77** (2008) 123538 [arXiv:0801.1667 [hep-th]]
- 2007 • **A. Cardoso, K. Koyama, S. S. Seahra and F. P. Silva**, “Cosmological perturbations in the DGP braneworld: numeric solution,” *Phys. Rev. D* **77** (2008) 083512 [arXiv:0711.2563 [astro-ph]]
- 2007 • **B. A. Bassett, M. Brownstone, A. Cardoso, M. Cortês, Y. Fantaye, R. Hlozek, J. Kotze and P. Okouma**, “Is the Dynamics of Tracking Dark Energy Detectable?,” *JCAP* **0807** (2008) 007 [arXiv:0709.0526 [astro-ph]]
- 2007 • **A. Cardoso, T. Hiramatsu, K. Koyama and S. S. Seahra**, “Scalar perturbations in braneworld cosmology,” *JCAP* **0707** (2007) 008 [arXiv:0705.1685 [astro-ph]]
- 2006 • **A. Cardoso, K. Koyama, A. Mennim, S. S. Seahra and D. Wands**, “Coupled bulk and brane fields about a de Sitter brane,” *Phys. Rev. D* **75** (2007) 084002 [arXiv:hep-th/0612202]
- 2006 • **A. Cardoso**, “Constraining hybrid inflation models with WMAP three-year results,” *Phys. Rev. D* **75** (2007) 027302 [arXiv:astro-ph/0610074]

Proceedings

- 2008 • **A. Cardoso**, “Scalar perturbations in DGP braneworld cosmology,” published in the proceedings of the “43rd Rencontres de Moriond,” La Thuile (Val d’Aosta, Italy) [arXiv:0805.2596 [astro-ph]].
- 2007 • **A. Cardoso**, “Scalar perturbations in Randall-Sundrum braneworld cosmology,” talk given at the “Cargèse Summer School: Cosmology and Particle Physics Beyond the Standard Models,” Corsica (France), PoS C ARGESSE2007 (2007) 019 [arXiv:0710.4507 [astro-ph]].

Selected Talks and Presentations

- 01/04/2014 • **“The real nature of quantum particles,”** Lunch Seminar, Centre for Theoretical and Mathematical Physics, University of Cape Town, South Africa
- 04/03/2014 • **“The real nature of quantum particles,”** Journal Club, African Institute for Mathematical Sciences, Cape Town, South Africa
- 16/04/2009 • **“Singularities in Loop Quantum Cosmology,”** 4th Iberian Cosmology Meeting, Consejo Superior de Investigaciones Científicas, Madrid, Spain
- 16/12/2008 • **“Singularities in Loop Quantum Cosmology,”** UK Cosmology Meeting, Queen Mary, University of London, UK
- 08/04/2008 • **“Generalised perturbation equations in bouncing cosmologies,”** Joint Exchange Development Initiative (JEDI 1) workshop, Langebaan, West Coast Nature Reserve, South Africa
- 19/03/2008 • **“Cosmological perturbations in the DGP braneworld: numeric solution,”** 43rd Rencontres de Moriond, La Thuile, Val d’Aosta (Italy)
- 06/03/2008 • **“Generalised perturbation equations in bouncing cosmologies,”** Third Iberian Cosmology Meeting, Universidade de Lisboa, Portugal
- 04/01/2008 • **“Is the Dynamics of Scaling Dark Energy Detectable?,”** Weekly Seminar, Centro Multidisciplinar de Astrofísica, Instituto Superior Técnico, Universidade Técnica de Lisboa, Portugal
- 06/12/2007 • **“Is the Dynamics of Scaling Dark Energy Detectable?,”** Astronomy Seminar, Astronomy Centre, University of Sussex, UK
- 14/11/2007 • **“BBN Constraints on Scaling Quintessence Models and Dark Energy Surveys,”** Cosmology Seminar, Institute for Theoretical Physics, University of Heidelberg, Germany
- 22/08/2007 • **“BBN Constraints on Scaling Quintessence Models and Dark Energy Surveys,”** Cosmo 07 Conference, University of Sussex, UK
- 08/08/2007 • **“Scalar perturbations in Randall-Sundrum braneworld cosmology,”** Cargèse Summer School: Cosmology and Particle Physics Beyond the Standard Models, Institut d’Etudes Scientifiques, Corsica (France)
- 26/06/2007 • **“Scalar perturbations in braneworld cosmology,”** UK Cosmology Meeting, University of Portsmouth, UK
- 10/04/2007 • **“Numeric evolution of coupled bulk and brane fields,”** Cosmology & Gravity Group Seminar, Department of Mathematics and Applied Mathematics, University of Cape Town, South Africa
- 13/12/2006 • **“Cosmological matching conditions in power-law collapsing and expanding universes,”** UK Cosmology Meeting, Kings College London, UK

Selected Talks and Presentations (continued)

- 02/12/2006 • **“Cosmological matching conditions in power-law collapsing and expanding universes,”** First Iberian Cosmology Meeting, Universidade do Porto, Portugal
- 30/08/2006 • **“Constraining hybrid inflation models with WMAP three-year results,”** UK Cosmology Meeting, St Martin’s College Ambleside, UK

Awards and Scholarships

- 2010 - 2013 • **Foundation for Science and Technology, Portugal**
Postdoctoral Fellowship (BPD)
Duration: three years
- 2005 - 2009 • **Foundation for Science and Technology, Portugal**
PhD Studentship (BD)
Duration: four years
- 2004 - 2005 • **Foundation for Science and Technology, Portugal**
Research Fellowship (BI)
Duration: one year
- 2003 - 2004 • **Foundation for Science and Technology, Portugal**
Research Studentship (BIC)
Duration: half year

Computational Skills

- **Mathematical software:** Sage, Maple, Mathematica and Matlab
- **Programming languages:** Python, C and Fortran
- **Document software:** L^AT_EX, iWork, Microsoft Office and Open Office
- **Operative systems:** Mac OS X, Windows and Linux

Languages Skills

- **Portuguese (Native):** fluent in reading, writing and speaking
- **English:** fluent in reading, writing and speaking
- **French and Spanish:** fluent in reading

Research Interests

- **Cosmology and Particle Physics**
- **History and Philosophy of Science**
- **Foundations of Modern Physics**
- **Fractals and Chaos Theory**
- **Education and Learning Theory**

Referees

- **Prof. David Wands**

Email: david.wands@port.ac.uk

Address: Institute of Cosmology & Gravitation, University of Portsmouth, Dennis Sciana Building, Burnaby Road, Portsmouth PO1 3FX, UK

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- **Prof. Bruce A. Bassett**

Email: bruce@sao.ac.za

Address: Department of Mathematics and Applied Mathematics, University of Cape Town, Rondebosch, 7700, Cape Town, South Africa

Telephone: +27 216503208

Fax: +27 216502334

- **Prof. Ed Copeland**

Email: ed.copeland@nottingham.ac.uk

School of Physics and Astronomy, University of Nottingham, Nottingham NG7 2RD, United Kingdom

Telephone: +44 (011)59515164

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