

Current position: University of Cambridge/ Wellcome Trust Research Associate.

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EDUCATION

- 10/2011** *PhD. in Physics, Cum laude.* Autonomous University of Barcelona, Barcelona, Spain.
Dissertation title: “Extreme-Mass-Ratio Systems: Modelling and Test of Alternatives Theories of Gravity”.
Advisor: Dr Carlos Fernández Sopena.
- 4/2009** *M.Sc. in Theoretical Physics, Cum laude.*
- 7/2005** *B.Sc. in Physics, with Departmental Honours.*

FELLOWSHIPS & AWARDS

- 2015-2016** University of Cambridge/ Wellcome Trust Senior Interdisciplinary Internship.
Project title: “Development of a Compressive Fluorescence System”.
- 2013-2014** Marie Curie Postdoctoral Fellowship.
Project title: “Precise Parameter Estimation of Gravitational Waves Sources of Low and Medium Frequencies”.
- 2012-2013** Beatriu de Pinos Postdoctoral Fellowship, Catalan Government.
- 2012-2014** St. Catharine’s College Postdoctoral Associate.
- 2007-2011** Graduate research Fellowship [4 years], Spanish Ministry .
- 2005-2007** Marie Curie graduate research training network [1.5 years].

MAJOR COLLABORATIONS

- 02/03/2012-present** Member of the LIGO-VIRGO Scientific Collaboration.
- 04/05/2013-present** Member of the eLISA Consortium.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- 04/03/2010-present** Spanish Astronomical Society (SEA), Spain.
- 01/01/2011-present** Thematic Network in Relativity and Gravitation (RTRG), Spain.
- 14/08/2010-present** Catalan association of scientific communication (ACCC), Spain.

PARTICIPATION IN FUNDED PROJECTS

- Spanish Contribution to LISA PathFinder and Development of the LISA Mission, 2010-2013, (AYA2010-15709). P.I.: Prof. José Alberto Lobo Gutiérrez.
- Modeling the Gravitational Wave Emission from Binary Black Hole Mergers, 2010-2012, (CESCA). P.I.: Dr Carlos Fernández Sopena.
- Simulations of Binary Black Hole Systems as Sources of Gravitational Radiation, 2010-2012, (ICTS 121). P.I.: Dr Carlos Fernández Sopena.
- Gravitational Wave Astronomy-LISA Group (2009 SGR-935) AGAUR, 2009-2013. P.I.: Dr Carlos Fernández Sopena.
- Activities derived from the functionality extension of the DMU in LISA PathFinder, 2009-2010 (AYA2009-15709). P.I.: Prof. José Alberto Lobo Gutiérrez.
- Simulations of Stellar Compact Objects orbiting a Massive Black Hole within the LISA Band, 2008-2010,(CESCA). P.I.: Dr Carlos Fernández Sopena.
- LISA Gravitational Wave Astrophysics from Simulations of Compact Objects into Massive Black Holes, 2008-2010. (MIRG-CT-2007-205005). P.I.: Dr Carlos Fernández Sopena.
- Controlled quantum coherence and entanglement in sets of trapped particles, 2007 -2010 (CONQUEST MRTN-CT-2003-505089). PI: Prof. Paolo Tombesi.

TEACHING EXPERIENCE

- 2011-present** Supervision of twelve undergraduate students over four years (IoA/DAMTP):
General Relativity for astrophysicist: Part II and Part III students.
- Lent 2014** Department of Applied Mathematics and Theoretical Physics, Cambridge, UK
Course Title: “Astronomy of Strong Gravity: gravitational wave generation and detection”.
- 2012-present** PhD projects, at the Institute of Astronomy (IoA) Cambridge, UK:
-Mr Robert Cole. Title: “Modelling extreme-mass-ratio inspirals”.
-Mr Alvin Chua. Title: “Electromagnetic amplification by gravitational waves”
- 2014-2015** Mr Oliver Tattersall, master’s projects (IoA):
Title: “Hamiltonian formalism for a binary system in perturbed Black Hole spacetimes”
Ms Sasha Hajnal-Corob, master’s projects (IoA):
Title: “Testing Chern-Simons modified gravity with gravitational-wave detections of relativistic binaries.”
- 2013-2014** Mr Alex Davis, master’s projects (IoA):
Title: “Electromagnetic amplification by gravitational waves from supermassive black hole mergers”.
- 2012-2013** Mr Owen Graham, master’s projects (IoA):
Title: “Pseudo-Spectral methods for gravitational-wave modelling”.

INVITED PRESENTATIONS

- 12/12/2014** Royal Astronomical Society discussion meeting "Towards gravitational wave astronomy: data analysis techniques and challenges (UK).
- 05/11/2014** Seminar for the Relativity and Cosmology seminar series at Queen Mary University (UK). Title: "Opening a new observational band on the Universe"
- 05/11/2014** Seminar for the Relativity and Cosmology seminar series at Queen Mary University (USA). Title: "Opening a new observational band on the Universe"
- 11/06/2014** International presentation to LIGO Burst group. LIGO-VIRGO (USA-EU). Title: "Gravitational wave parameter estimation with compressed likelihood evaluations"
- 30/05/2014** Laser Interferometer Gravitational-Wave Observatory (LIGO). International Seminar (USA). Title: High-speed gravitational-wave parameter estimation.

SELECTED RECENT PRESENTATIONS

- 03/2015** Invited talk at Birmingham University, Birmingham, UK. Title: "Accelerated inference for large experiments: rapid parameter estimation of gravitational wave sources".
- 05/2014** Contributed talk at X International LISA Symposium, Florida, USA. Title: "Accelerated parameter estimation of gravitational wave sources".
- 04/2014** Contributed talk at Gravitational Waves Astrophysics meeting, Sant Cugat forum on Astrophysics, Spain. Title: "Accelerated parameter estimation of gravitational wave sources".
- 11/2013** Seminar talk at University of Cardiff, Wales, UK. Title: "Gravitational-wave parameter estimation with Reduced Order Quadratures".
- 5/2013** Seminar talk at Department of Applied Mathematics and Theoretical Physics, Cambridge UK. Title: "Challenges in Gravitational-Wave Modelling of Extreme-Mass-Ratio Inspirals".
- 4/2013** Talk at BritGrav 2013 meeting, University of Sheffield, UK. Title: "Fast Markov chain Monte Carlo for Gravitational-Wave Parameter Estimation".
- 3/2012** Seminar talk at Institute of Astronomy, Cambridge, UK. Title: "Extreme-mass-ratio binaries: Modelling and test of Chern-Simons Modified Gravity".
- 6/2012** Seminar talk at University of Maryland College Park. Maryland, USA. Title: "Testing Chern-Simons Modified Gravity with Gravitational-Wave detections of Extreme-Mass-Ratio Binaries".
- 2/2011** Talk at the Iberian Gravitational Waves Meeting 2011, Universitat de les Illes Balears, Balearic Islands, Spain. Title: "Extreme-Mass-Ratio Inspirals: modelling and test of alternative theories of gravity".

ORGANISATION OF SCIENTIFIC MEETINGS

- 31/03/2014-01/ 04/2014** Scientific organising committee of the BritGrav 2014. UK.
15/02/2012-15/02/2012 Local organising committee (LOC) of the 2nd Iberian Gravitational Wave Meeting. Spain.
07/09/2009-11/07/2009 LOC of the LISA AstroGR Barcelona. Spain.
16/06/2008-20/06/2008 LOC of the 7th International LISA Symposium. Spain.

OUTREACH

- 16 /11/ 2014** Cosmology@KICC (UK): Outreach event aimed at sixth form students (those studying for their A-levels) to come and meet experts within the field of cosmology.
10 /11/2014 STEM Careers for Girls Netherhall School (UK): Outreach event aimed to inspire women in science, technology, engineering, mathematics and medicine.
26/03/2013 Science Festival, Institute of Astronomy Open Day, 2013 (UK): Science exhibit: Gravitational waves: Astronomy's new messenger.
09/01/2013 BBC Stargazing LIVE, 2013 (UK): Science exhibit: "Growing Galaxies"
24/03/2012 Institute of Astronomy Open Day, support staff (UK): Activity Title: "Making a spectrometer."
4/2009 Talk at Meeting with postgrads, Barcelona University, Spain. Title: "Ones gravitacionals, la remor de l'espaitemps".
5/2009 Talk at Science day in School, High School Torredembarra, Spain. Title: "Escoltant l'Univers".
2008 Publication in the Journal of Physics (Catalan society) vol. 4, 10 – 19. Title: "A la captura d'ones gravitacionals".

STAYS ABROAD

- 2014** California institute of Technology, Pasadena, USA. Three weeks postdoctoral visit.
2013 California institute of Technology, Pasadena, USA. Five weeks postdoctoral visit.
2011 University of Maryland, Washington DC, USA. Four weeks postdoctoral visit.
2010 Institute of Astronomy, University of Cambridge, UK. Three months visit during PhD.
2005-2007 University of Camerino, Italy. Master thesis.