

# Aurelio Romero-Bermúdez

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## Education

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- Queens' College, University of Cambridge.**  
PhD candidate in Physics.  
2012-2015 The first part of my research is focused on superconductivity in nanostructures. The second part is concerned with the study of quantum critical points and spontaneous symmetry breaking using the gauge/gravity correspondence.  
Supervisor: Dr. Antonio M. García-García.
- Queens' College, University of Cambridge.**  
MPhil in Micro and Nanotechnology Enterprise. (Distinction.)  
2011-2012 Thesis: "Enhancement of Superconductivity in Magnesium Diboride nanostructures".  
Supervisor: Dr. Antonio M. García-García.
- Universidade de Santiago de Compostela.**  
"Licenciatura" (5-yr degree) in Physics, Particle Physics stream. (9.21/10.)  
2006-2011

## Scholarships, Grants and Prizes

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- 2015 Institute of Physics travel grant, (£300).
- 2014-2015 Queens' College travel grant, (£600).
- 2013 University of Cambridge Physics Department studentship, (£27,500 + PhD fees).
- 2011 "La Caixa" foundation studentship for graduate studies in European Universities, (£33,000 + Master and PhD fees).
- 2010 "Xunta de Galicia" collaboration scholarship at the Department of Applied Physics at the University of Santiago de Compostela, (€3,150).
- 2006 Bronze medal in the Spanish Physics Olympiads for high school level.
- 2006 Bronze medal in the Spanish Chemistry Olympiads for high school level.

## Scientific publications

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- A. Romero-Bermúdez and A. M. García-García. *Conductivity and entanglement entropy of high dimensional holographic superconductors*. To appear, [arXiv: 1502.03616](https://arxiv.org/abs/1502.03616).
- A. Romero-Bermúdez and A. M. García-García. *Size effects in superconducting thin films coupled to a substrate*. [Phys. Rev. B 89, 064508 \(2014\)](https://doi.org/10.1103/PhysRevB.89.064508).
- A. Romero-Bermúdez and A. M. García-García. *Shape resonances and shell effects in thin-film multiband superconductors*. [Phys. Rev. B 89, 024510 \(2014\)](https://doi.org/10.1103/PhysRevB.89.024510).

## Conferences

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Presenting:

- 2014 Poster "Large D properties of holographic superconductors" at the conference **Quantum Field Theory String Theory and Condensed Matter Physics**, in the Orthodox Academy of Crete, Greece.
- 2014 Invited talk "Size effects in superconducting thin-films coupled to a substrate" at the conference **Superstripes** in the Ettore Majorana Foundation and Centre for Scientific Culture, Erice, Italy.

Attending:

- 2015 **Eurostrings** at the DAMTP, University of Cambridge, UK.

- 2013 **Mathematics and Physics of the Holographic Principle.** Isaac Newton Institute for Mathematical Sciences, University of Cambridge, UK.
- 2011 **Frontiers in Photonics and Laser Technologies.** University of Santiago de Compostela, Spain.

### Invited talks and seminars

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- 2014 *“Large dimensionality in Holographic Superconductors. Designer (multi)gravity in Condensed Matter”.*  
**Crete Center for Theoretical Physics, University of Crete, Greece.**

### Workshops and Schools

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- 2015 **Holographic Methods for Strongly Coupled Systems** at the Galileo Galilei Institute for Theoretical Physics, Florence, Italy.
- 2014 **CERN-CKC TH Institute on Numerical Holography** at CERN, European Organization for Nuclear Research.
- 2014 **Summer School on String Theory and Holography** at the University of Porto and the Technical Institute of Lisbon, Portugal.

### Additional training

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- 2010 **GSI (Helmholtz Institute for Heavy Ion Research)** summer program (August-September). Darmstadt, Germany.  
Testing of a neutron detector prototype with improved time and spatial resolution. Part of the Large Area Neutron Detector (LAND) experiment. Supervised by: Dr. Michael Heil
- 2009 “The Secrets of the Atomic Nucleus” summer campus. **University of Strasbourg**, France.
- 2006 European Masterclasses in Particle Physics. Organized by EPOG. **Universidad de Santiago de Compostela**, Spain.

### Teaching

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- 2014-2015 Supervisor of **Mathematics 1A**, course B. Part I Natural Science Tripos. Queens’ College, University of Cambridge.
- 2012-2014 Supervisor of **Advanced Quantum Physics**. Part II Natural Science Tripos. Department of Physics, University of Cambridge.

### Referees

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Dr. Antonio Miguel García García,  
(PhD. Supervisor, EPSRC Career Acceleration Fellow).  
Cavendish Laboratory, Theoretical Condensed Matter  
group. University of Cambridge.  
JJ Thompson, Cambridge,  
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Dr. Jose Manuel Sanchez de Santos,  
(Undergraduate Tutor, Deputy Head of Department).  
Physics Faculty, Department of Particle Physics.  
University of Santiago de Compostela.  
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Santiago de Compostela, 15782, Spain.  
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