

# Alberto García-Raboso

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## Personal information

Date of birth November 30, 1980  
Place of birth Barcelona, Spain  
Nationality Spanish

## Education

2008–now **Ph.D. in Mathematics**, *University of Pennsylvania*, Philadelphia, PA.  
Ph.D. candidate as of October 2008  
Anticipated date of graduation: May 2013  
advisor Prof. Tony Pantev  
2003–2008 **Ph.D. in Physics**, *Rutgers University*, New Brunswick, NJ.  
dissertation *D-Branes and Orientifolds in Calabi-Yau Compactifications*  
advisor Prof. Duiliu-Emanuel Diaconescu  
1999–2003 **“Licenciatura” (B.S.) in Mathematics**, *Universidad Autónoma*, Madrid, Spain.  
Graduated with honors  
GPA: 3.67 / 4.00  
1998–2003 **“Licenciatura” (B.S.) in Physics**, *Universidad Autónoma*, Madrid, Spain.  
GPA: 3.46 / 4.00

## Honors and awards

2008–2013 **Benjamin Franklin Fellowship**, *University of Pennsylvania*.  
Full tuition, health insurance and a yearly stipend of \$21,000  
2006–2008 **Graduate Assistantship**, *Rutgers University*.  
2005–2006 **Teaching Assistantship**, *Rutgers University*.  
2003–2005 **“La Caixa” Fellowship**.  
Full tuition, health insurance and a yearly stipend of aprox. \$19,000  
2003 **Premio Extraordinario de Fin de Carrera, “Licenciatura” in Mathematics**.  
Excellence award for highest undergraduate GPA of the class of 2003  
2002–2003 **Research grant for senior year students**, *Spanish Ministry of Education*.

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## Experience

### Teaching

- Spring 2011 **Math 114 (Calculus II)**, *University of Pennsylvania*.  
Teaching Assistant in charge of recitations and homework grading
- Fall 2010 **Math 602 (Algebra)**, *University of Pennsylvania*.  
Grader
- Spring 2010 **Math 512 (Advanced Linear Algebra)**, *University of Pennsylvania*.  
Teaching Assistant in charge of recitations and homework grading
- Spring 2010 **Math 104 (Calculus I)**, *University of Pennsylvania*.  
Teaching Assistant in charge of recitations, weekly quizzes and homework
- Fall 2009 **Math 114 (Calculus II)**, *University of Pennsylvania*.  
Teaching Assistant in charge of recitations and administration of weekly quizzes
- Summer 2006 **Physics 203 (General Physics I)**, *Rutgers University*.  
Teaching Assistant in charge of recitations, weekly quizzes and homework
- Spring 2006 **Physics 204 (General Physics II)**, *Rutgers University*.  
Teaching Assistant in charge of recitations, weekly quizzes and homework
- Fall 2005 **Physics 203 (General Physics I)**, *Rutgers University*.  
Teaching Assistant in charge of recitations, weekly quizzes and homework

### Research in Physics

- Jun 2008–  
Jul 2008 **Postdoctoral Researcher**, *CERN*, Geneva, Switzerland.  
Project: DTTF pseudorapidity assignment for the CMS L1 Muon Trigger System  
Under the direction of Prof. Jorge Fernández de Trocóniz (UAM)
- Jul 2002–  
Jun 2003 **Research Assistant**, *CERN* (Geneva, Switzerland) and *UAM* (Madrid, Spain).  
Project: Calculation of DTTF patterns for the CMS L1 Muon Trigger System  
Under the direction of Prof. Jorge Fernández de Trocóniz (UAM)

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## Publications

### Theoretical Physics

- (1) D. E. Diaconescu, A. Garcia-Raboso, R. L. Karp and K. Sinha,  
*D-brane superpotentials in Calabi-Yau orientifolds*,  
*Adv. Theor. Math. Phys.* **11**, 471 (2007) [arXiv:hep-th/0606180].
- (2) D. E. Diaconescu, A. Garcia-Raboso and K. Sinha,  
*A D-brane landscape on Calabi-Yau manifolds*,  
*JHEP* **0606**, 058 (2006) [arXiv:hep-th/0602138].

### Experimental Physics

- (3) S. Chatrchyan *et al.* [CMS Collaboration],  
*Commissioning and Performance of the CMS Pixel Tracker with Cosmic Ray Muons*,  
*JINST* **5**, T03007 (2010) [arXiv:0911.5434 [physics.ins-det]]
- (4) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of the CMS Level-1 Trigger during Commissioning with Cosmic Ray Muons*,  
*JINST* **5**, T03002 (2010) [arXiv:0911.5422 [physics.ins-det]]

- (5) S. Chatrchyan *et al.* [CMS Collaboration],  
*Measurement of the Muon Stopping Power in Lead Tungstate*,  
JINST **5**, P03007 (2010) [arXiv:0911.5397 [physics.ins-det]]
- (6) S. Chatrchyan *et al.* [CMS Collaboration],  
*Commissioning and Performance of the CMS Silicon Strip Tracker with Cosmic Ray Muons*,  
JINST **5**, T03008 (2010) [arXiv:0911.4996 [physics.ins-det]]
- (7) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of CMS Muon Reconstruction in Cosmic-Ray Events*,  
JINST **5**, T03022 (2010) [arXiv:0911.4994 [physics.ins-det]]
- (8) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of the CMS Cathode Strip Chambers with Cosmic Rays*,  
JINST **5**, T03018 (2010) [arXiv:0911.4992 [physics.ins-det]]
- (9) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of the CMS Hadron Calorimeter with Cosmic Ray Muons and LHC Beam Data*,  
JINST **5**, T03012 (2010) [arXiv:0911.4991 [physics.ins-det]]
- (10) S. Chatrchyan *et al.* [CMS Collaboration],  
*Fine Synchronization of the CMS Muon Drift-Tube Local Trigger using Cosmic Rays*,  
JINST **5**, T03004 (2010) [arXiv:0911.4904 [physics.ins-det]]
- (11) S. Chatrchyan *et al.* [CMS Collaboration],  
*Calibration of the CMS Drift Tube Chambers and Measurement of the Drift Velocity with Cosmic Rays*,  
JINST **5**, T03016 (2010) [arXiv:0911.4895 [physics.ins-det]]
- (12) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of the CMS Drift-Tube Local Trigger with Cosmic Rays*,  
JINST **5**, T03003 (2010) [arXiv:0911.4893 [physics.ins-det]]
- (13) S. Chatrchyan *et al.* [CMS Collaboration],  
*Commissioning of the CMS High-Level Trigger with Cosmic Rays*,  
JINST **5**, T03005 (2010) [arXiv:0911.4889 [physics.ins-det]]
- (14) S. Chatrchyan *et al.* [CMS Collaboration],  
*Identification and Filtering of Uncharacteristic Noise in the CMS Hadron Calorimeter*,  
JINST **5**, T03014 (2010) [arXiv:0911.4881 [physics.ins-det]]
- (15) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of CMS Hadron Calorimeter Timing and Synchronization using Test Beam, Cosmic Ray, and LHC Beam Data*,  
JINST **5**, T03013 (2010) [arXiv:0911.4877 [physics.ins-det]]
- (16) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance of the CMS Drift Tube Chambers with Cosmic Rays*,  
JINST **5**, T03015 (2010) [arXiv:0911.4855 [physics.ins-det]]
- (17) S. Chatrchyan *et al.* [CMS Collaboration],  
*Commissioning of the CMS Experiment and the Cosmic Run at Four Tesla*,  
JINST **5**, T03001 (2010) [arXiv:0911.4845 [physics.ins-det]]
- (18) S. Chatrchyan *et al.* [CMS Collaboration],  
*CMS Data Processing Workflows during an Extended Cosmic Ray Run*,  
JINST **5**, T03006 (2010) [arXiv:0911.4842 [physics.ins-det]]
- (19) S. Chatrchyan *et al.* [CMS Collaboration],  
*Aligning the CMS Muon Chambers with the Muon Alignment System during an Extended Cosmic Ray Run*,  
JINST **5**, T03019 (2010) [arXiv:0911.4770 [physics.ins-det]]
- (20) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance Study of the CMS Barrel Resistive Plate Chambers with Cosmic Rays*,  
JINST **5**, T03017 (2010) [arXiv:0911.4045 [physics.ins-det]]

- (21) S. Chatrchyan *et al.* [CMS Collaboration],  
*Time Reconstruction and Performance of the CMS Electromagnetic Calorimeter*,  
JINST **5**, T03011 (2010) [arXiv:0911.4044 [physics.ins-det]]
- (22) S. Chatrchyan *et al.* [CMS Collaboration],  
*Alignment of the CMS Muon System with Cosmic-Ray and Beam-Halo Muons*,  
JINST **5**, T03020 (2010) [arXiv:0911.4022 [physics.ins-det]]
- (23) S. Chatrchyan *et al.* [CMS Collaboration],  
*Precise Mapping of the Magnetic Field in the CMS Barrel Yoke using Cosmic Rays*,  
JINST **5**, T03021 (2010) [arXiv:0910.5530 [physics.ins-det]]
- (24) S. Chatrchyan *et al.* [CMS Collaboration],  
*Performance and Operation of the CMS Electromagnetic Calorimeter*,  
JINST **5**, T03010 (2010) [arXiv:0910.3423 [physics.ins-det]]
- (25) S. Chatrchyan *et al.* [CMS Collaboration],  
*Alignment of the CMS Silicon Tracker during Commissioning with Cosmic Rays*,  
JINST **5**, T03009 (2010) [arXiv:0910.2505 [physics.ins-det]].
- (26) C. Albajar *et al.*,  
*Test beam analysis of the first CMS drift tube muon chamber*,  
Nucl. Instrum. Meth. A **525**, 465 (2004).

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## Conference participation

- Oct 2011 **Fall 2011 AGNES Workshop**, *Stony Brook University*, Stony Brook, NY.
- Jul 2011 **Mirror Symmetry & Tropical Geometry**, Cetraro, Italy.
- Jun 2011 **School on D-modules and Applications in Singularity Theory**, *IMUS and ICMAT*, Sevilla and Madrid, Spain.
- Jun 2011 **Algebra, Topology and Fjords!**, Nordfjordeid, Norway.
- May 2011 **Higher Structures in Topology and Geometry V**, *Universität Hamburg*, Hamburg, Germany.
- Apr 2011 **Spring 2011 AGNES Workshop**, *MIT*, Cambridge, MA.
- Jan 2011 **2011 Workshop on Homological Mirror Symmetry and Related Topics**, *University of Miami*, Coral Gables, FL.
- Sep 2010 **Fall 2010 AGNES Workshop**, *University of Connecticut*, Storrs, CT.
- Aug 2010 **Conference on Homotopy Theory and Derived Algebraic Geometry**, *Fields Institute*, Toronto, Canada.
- Jun 2010 **Summer School and Conference on Hodge Theory and Related Topics**, *ICTP*, Trieste, Italy.
- Apr 2010 **Spring 2010 AGNES Workshop**, *University of Massachusetts, Amherst*, Amherst, MA.
- Oct 2009 **Fall 2009 AGNES Workshop**, *Stony Brook University*, Stony Brook, NY.
- Jun 2009 **RTG Graduate Summer School “Geometry of Quantum Fields and Strings”**, *University of Pennsylvania*, Philadelphia, PA.
- Jun 2009 **Summer School on Derived Algebraic Geometry**, *Universidad de Salamanca*, Salamanca, Spain.
- May 2009 **Workshop on Topological Field Theories**, *Northwestern University*, Evanston, IL.
- Mar 2008 **Workshop on Algebraic-Geometric Derived Categories and Applications**, *Institute for Advanced Study*, Princeton, NJ.
- Nov 2007 **Gauge Theory and Representation Theory**, *Institute for Advanced Study*, Princeton, NJ.
- Jun 2007 **Summer Research Conference “Derived Categories in Mathematics and Physics”**, Snowbird, UT.
- Jun 2007 **Summer School on Derived Categories**, *University of Utah*, Salt Lake City, UT.
- Jul 2006 **PITP Summer School “Applications of String Theory”**, *Institute for Advanced Study*, Princeton, NJ.

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## Presentations

- Dec 2011 Stable  $\infty$ -categories  
Seminar on Higher Structures in Algebra, Geometry and Physics, University of Pennsylvania
- Nov 2011 The language of  $\infty$ -categories  
Seminar on Higher Structures in Algebra, Geometry and Physics, Temple University
- Nov 2010 Higher stacks (3 talks)  
Graduate Student Algebra Seminar, University of Pennsylvania
- Mar 2010 Hodge structures and the Hodge conjecture  
Graduate Student Seminar, University of Pennsylvania
- Sep 2009 Model categories (2 talks)  
Graduate Student Algebra Seminar, University of Pennsylvania
- Mar 2009 Noncommutative deformations of commutative schemes  
Graduate Student Algebra Seminar, University of Pennsylvania
- Jul 2008  $p_T$  Assignment in the DT Track Finder for Day 1  
July 2008 CMS Level 1 and High Level Trigger Commissioning and Software Meeting  
CERN, Geneva, Switzerland

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## Languages

- Spanish Mother tongue
- English Near native
- French Working knowledge
- Italian Working knowledge
- Catalan Working knowledge

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## Updated

Dec 13, 2011