

# Shibi Rajagopalan

## *Curriculum Vitæ*

Date of Birth: Dec 18, 1979  
Civil Status: Married

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## Education

**Ph.D. Physics**, Dec 2010  
University of Oklahoma, Norman, Oklahoma  
Dissertation Advisor: Howard Baer

**Master of Science Physics**, Aug 2008  
Florida State University, Tallahassee, Florida

**Master of Science Applied & Computational Mathematics**, May 2005  
Florida State University, Tallahassee, Florida

**Bachelor of Science Physics**, May 2002  
Pennsylvania State University,  
University Park, Pennsylvania

## Publications

**Prospects for Inert Dark Matter at the LHC**, in preparation.

**Observables for SUSY Fits**, in preparation.

**Mixed Axion/Neutralino Cold Dark Matter in supersymmetric models**  
JCAP **1106**, 031 (2011), [arXiv:1103.5413](https://arxiv.org/abs/1103.5413) [hep-ph]

**Testing the gaugino AMSB model at the Tevatron via slepton pair production**  
JHEP **1101**, 005 (2011), [arXiv:1010.4357](https://arxiv.org/abs/1010.4357) [hep-ph]

**LHC Phenomenology and Dark Matter Considerations for Various Anomaly Mediated Supersymmetry Breaking Models** · Dissertation, [arXiv:1010.3384](https://arxiv.org/abs/1010.3384) [hep-ph]

**Neutralino Versus Axion and Axino Cold Dark Matter in Minimal, Hypercharged and Gaugino AMSB** · JCAP **1007**, 014 (2010), [arXiv:1004.3297](https://arxiv.org/abs/1004.3297) [hep-ph]

**Gaugino Anomaly Mediated SUSY Breaking: Phenomenology and Prospects for the LHC** · JHEP **1005**, 069 (2010), [arXiv:1002.4633](https://arxiv.org/abs/1002.4633) [hep-ph]

**Prospects for Hypercharged Anomaly-Mediated Supersymmetry at the LHC**  
JHEP **0910**, 078 (2009), [arXiv:0908.4259 \[hep-ph\]](#)

**Granular Drag on a Discrete Object: Shape Effects on Jamming**  
Physical Review E **64** (2001), [arXiv:0107392 \[cond-mat\]](#)

## **Presentations**

**Non-thermal Production of Dark Matter: Heavy Axino Cosmology** · High Energy Theory Seminar · Laboratoire de Physique Subatomique et de Cosmologie (LPSC) · Grenoble, France, April 1, 2011

**Non-thermal Production of Dark Matter: Heavy Axino Cosmology** · Seminario di Fisica Astroparticellare · University of Torino, Torino, Italy · February 25, 2011

**LHC Phenomenology and Dark Matter Considerations for Various Anomaly Mediated Supersymmetry Breaking Models** · Dissertation Defense · University of Oklahoma, Norman, OK, September 21, 2010

**The Hypercharged Anomaly-Mediated Supersymmetry Breaking Model** · Rencontre de Physique des Particules 2010 · Institut de Physique Nucleaire de Lyon, Lyon, France, January 25, 2010

**Aspects of Inflation** · Specialist Presentation · University of Oklahoma, Norman, OK, November 17, 2009

**The Hypercharged Anomaly-Mediated Supersymmetry Breaking Model** · Theory-LHC-France Meeting · Laboratoire de Physique Subatomique et de Cosmologie (LPSC) Grenoble, France, September 25, 2009

**Constraining Hypercharged Anomaly-Mediated Supersymmetry Breaking** · Particle Physics and Cosmology (PPC) Workshop · University of Oklahoma, Norman, Oklahoma, May 19, 2009

**Hypercharged Anomaly-Mediated Supersymmetry Breaking at the LHC** · 2009 Phenomenology Symposium: LHC Alive! · University of Wisconsin, Madison, Wisconsin, May 12, 2009

**Supersymmetry in Cosmology: an Inflationary Model** · Prospectus for Dissertation · Florida State University, Tallahassee, FL, Oct 2007

## **Conferences, Schools, & Workshops**

**Nuclear physics for Galactic Cosmic Rays in the AMS-02 era** · LPSC, Grenoble, France, December 3-4, 2012

**Understanding the Higgs** · University of Torino, Torino, Italy, November 28, 2012

**GDR Terascale** · Place Jussieu, Paris, France, November 5-8, 2012

**Dark Matter Underground and in the Heavens Workshop** ·

CERN, Geneva, Switzerland, July 18-29, 2011

**Global BSM fits and LHC data** · CERN, Geneva, Switzerland, February 10-11, 2011

**Rencontre de Physique des Particules 2011** · Clermont-Ferrand, France, January 13-14, 2011

**Conference on Non-Perturbative Quantum Field Theory 2010** ·

Norman, Oklahoma, April 9-10, 2010

**Rencontre de Physique des Particules 2010** ·

Lyon, France, January 25, 2010

**Theory-LHC-France** · Grenoble, France, September 24-25, 2009

**Theoretical Advanced Study Institute in Elementary Particle Physics (TASI)** ·

Boulder, Colorado, June 2-27, 2009

**3rd International Conference on the Interconnection Between Particle Physics and Cosmology (IPPC)** · Norman, Oklahoma, May 18-22, 2009

**2009 Phenomenology Symposium** · Madison, Wisconsin, May 11-13, 2009

**Prospects in Theoretical Physics (PiTP)** ·

Institute for Advanced Study, Princeton, New Jersey, July 14-25, 2008

**American Physical Society April Meeting** · St. Louis, Missouri, April 11-15, 2008

**Second Annual Dirac Lectures** · Tallahassee, Florida, March 26-28, 2008

**American Physical Society April Meeting** · Jacksonville, Florida, April 14-17, 2007

**First Annual Dirac Lectures** · Tallahassee, Florida, March 14-16, 2007

**Research Experiences for Undergraduates (REU)** ·

The Pennsylvania State University, University Park, Pennsylvania, June - August 2001

## Computation

**Research Applications** · CalcHEP · DarkSUSY · Delphes Detector Simulation · Form · Grace · Isajet · LanHEP · MadGraph · Maple · Mathematica · Matplotlib · micrOMEGAs · Prospino · Pythia 6/8 · Root · SOFTSUSY · Superlso · T<sub>E</sub>X

**Languages** · Awk · C++ · Fortran · HTML · Java · Python · Linux Shell Scripting

## Languages

English - Native · French - Intermediate · Italian - Beginner

## Professional Experience

### **Theory Post-Doc Fellow**, Nov 2011 - Current

Astroparticle/Dark Matter Physics & Collider Phenomenology · Istituto Nazionale di Fisica Nucleare (INFN) · University of Torino Department of Theoretical Physics, Torino, Italy

### **Visiting Researcher**, Nov 2010 - Nov 2011

SUSY Collider Phenomenology & Dark Matter Physics · Laboratoire de Physique Subatomique et de Cosmologie (LPSC), Grenoble, France

### **Graduate Research Assistant**, Aug 2008 - Dec 2010

SUSY Collider Phenomenology & Dark Matter Physics · University of Oklahoma, Norman, Oklahoma

### **Graduate Research Assistant**, Aug 2005 - Aug 2008

SUSY Collider Phenomenology & Dark Matter · Florida State University, Tallahassee, Florida

### **Teaching Assistant, Physics**, Sep 2005 - May 2007

Florida State University, Tallahassee, Florida

### **Teaching Assistant, Mathematics**, Sep 2003 - May 2005

Florida State University, Tallahassee, Florida

### **Polymer Lab Intern**, Feb 2003 - June 2003

Polymer Calorimetry/Oxygen Depletion · Spectroscopy · Berk-Tek, New Holland, Pennsylvania

### **Undergraduate Research Assistant**, Oct 1999 - Jan 2001

Physics of Sand Experiments · The Pennsylvania State University, University Park, Pennsylvania

## Teaching Experience

### **Florida State University**, Sep 2003 - May 2007

Teaching Assistantships in Physics and Math · Physics for Scientists and Engineers, A & B Lab · General Physics A & B Lab · Intro Astronomy Lab, 2 semesters · Graduate Quantum Field Theory A & B Grader · Graduate Quantum Mechanics A & B Grader · College Algebra Recitation, 4 Semesters · Tallahassee, Florida

### **Other Teaching Institutions**, Jan 2002 - Aug 2005

Luzerne County Community College · Huntington Learning Center · The Pennsylvania State University · The Princeton Review