

# SIDDHARTH MISHRA-SHARMA

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## ACADEMIC APPOINTMENTS

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### New York University

New York, NY, USA

Center for Cosmology and Particle Physics

Postdoctoral Associate

Sep. 2018 – Present

## EDUCATION

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### Princeton University

Princeton, NJ, USA

Ph.D. in Theoretical Physics

Sep. 2013 – Aug. 2018

Advisor: Mariangela Lisanti

Thesis: *The Search for Extragalactic Dark Matter*

### University of Cambridge

Cambridge, UK

Part III of the Mathematical Tripos (M.Math.)

Oct. 2012 – Jun. 2013

B.A. (Hons.) in Natural Sciences

Oct. 2009 – Jun. 2012

## PRIZES AND HONOURS

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- Kusaka Memorial Prize in Physics, Princeton Department of Physics 2017  
*Awarded to physics graduate students who have shown outstanding performance in research and professional promise.*
- Princeton Graduate School Impact Award 2016  
*Awarded to an individual in the community that has made a difference during their time at Princeton.*
- Princeton First-Year Graduate Fellowship 2013  
*Awarded for the first year of graduate study at Princeton.*
- Hugo de Balsham Prize 2012  
*Awarded for exceptional academic distinction at Peterhouse, Cambridge.*
- Peter Scheuer Scholarship in Natural Sciences 2011, 2012  
*Awarded for exceptional academic performance in Cambridge second/third year Tripos examinations.*
- Senior Academic Scholarship of Peterhouse, Cambridge 2010  
*Awarded for exceptional academic performance in Cambridge first year Tripos examinations.*

## PUBLICATIONS

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*Authors are usually listed in alphabetical order as per the standard in particle physics.*

12. L.J. Chang, M. Lisanti, S. Mishra-Sharma, *A Search for Dark Matter Annihilation in the Milky Way Halo*, [[arXiv:1804.04132](https://arxiv.org/abs/1804.04132)], Submitted for publication
11. S. Mishra-Sharma, D. Alonso, J. Dunkley, *Neutrino masses and beyond- $\Lambda$ CDM cosmology with LSST and future CMB experiments*, [[arXiv:1803.07561](https://arxiv.org/abs/1803.07561)], Submitted for publication
10. DarkSide Collaboration, *Constraints on Sub-GeV Dark Matter-Electron Scattering from the DarkSide-50 Experiment*, [[arXiv:1802.06998](https://arxiv.org/abs/1802.06998)], Submitted for publication
9. DarkSide Collaboration, *Low-Mass Dark Matter Search with the DarkSide-50 Experiment*, [[arXiv:1802.06994](https://arxiv.org/abs/1802.06994)], Submitted for publication

8. R. Bartels, D. Hooper, T. Linden, S. Mishra-Sharma, N.L. Rodd, B.R. Safdi, T.R. Slatyer, *Comment on “Characterizing the population of pulsars in the Galactic bulge with the Fermi Large Area Telescope”* [[arXiv:1705.00009v1](#)], *Phys.Dark Univ.* **20** (2018) 88-94 [[arXiv:1710.10266](#)]
7. M. Lisanti, S. Mishra-Sharma, N.L. Rodd, B.R. Safdi, *Mapping Extragalactic Dark Matter Annihilation with Galaxy Surveys: A Systematic Study of Stacked Group Searches*, *Phys.Rev.* **D97** (2018) 063005 [[arXiv:1709.00416](#)]
6. M. Lisanti, S. Mishra-Sharma, N.L. Rodd, B.R. Safdi, *A Search for Dark Matter Annihilation in Galaxy Groups*, *Phys.Rev.Lett.* **120** (2018) 101101 [[arXiv:1708.09385](#)]
5. T. Cohen, M. Lisanti, H. K. Lou, S. Mishra-Sharma, *LHC Searches for Dark Sector Showers*, *JHEP* **11**, 196 (2017) [[arXiv:1707.05326](#)]
4. S. Mishra-Sharma, N.L. Rodd, B.R. Safdi, *NPTFit: A code package for Non-Poissonian Template Fitting*, *Astron.J.* **153** (2017) no.6, 253 [[arXiv:1612.03173](#)]
3. Y. Kahn, G. Krnjaic, S. Mishra-Sharma, T.M.P. Tait, *Light Weakly Coupled Axial Forces: Models, Constraints, and Projections*, *JHEP* **05**, 002 (2017) [[arXiv:1609.09072](#)]
2. M. Lisanti, S. Mishra-Sharma, L. Necib, B.R. Safdi, *Deciphering Contributions to the Extragalactic Gamma-Ray Background from 2 GeV to 2 TeV*, *Astrophys.J.* **832** (2016) no.2, 117 [[arXiv:1606.04101](#)]
1. S.K. Lee, M. Lisanti, S. Mishra-Sharma, B.R. Safdi, *Modulation Effects in Dark Matter-Electron Scattering Experiments*, *Phys.Rev.* **D92** (2015) 083517 [[arXiv:1508.07361](#)]

## SELECTED SEMINARS AND TALKS

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| • Near-Field Cosmology with the Dark Energy Survey’s DR1 and Beyond | Chicago, IL, Jun. 2018         |
| • Particles, Strings and Cosmology (PASCOS) 2018                    | Cleveland, OH, Jun. 2018       |
| • Recontres de Blois  | Blois, France, Jun. 2018       |
| • Princeton Astrophysics/IAS Cosmology Lunch Seminar                | Princeton, NJ, May 2018        |
| • Fermilab Particle Astrophysics Seminar                            | Batavia, IL, Mar. 2018         |
| • Workshop on Statistical Challenges in the Search for Dark Matter  | Banff, Canada, Feb. 2018       |
| • Accelerating the Search for Dark Matter with Machine Learning     | Leiden, Netherlands, Jan. 2018 |
| • Maryland Elementary Particle Theory Seminar                       | College Park, MD, Nov. 2017    |
| • Rutgers High Energy Theory Seminar                                | New Brunswick, NJ, Nov. 2017   |
| • Cornell Particle Theory Seminar                                   | Ithaca, NY, Nov. 2017          |
| • Caltech Particle Theory Seminar                                   | Pasadena, CA, Oct. 2017        |
| • UC Irvine Joint Particle Seminar                                  | Irvine, CA, Oct. 2017          |
| • LHC Long-Lived Particles Community Workshop (Remote Talk)         | Trieste, Italy, Oct. 2017      |
| • Oxford Dalitz Seminar in Fundamental Physics                      | Oxford, UK, Oct. 2017          |
| • KIPAC Tea Talk  | Stanford, CA, Sep. 2017        |
| • UC Santa Cruz Institute for Particle Physics Seminar              | Santa Cruz, CA, Sep. 2017      |
| • Berkeley 4D Seminar   | Berkeley, CA, Sep. 2017        |
| • Dark Matter, Neutrinos and their Connection (DA $\nu$ CO)         | Odense, Denmark, Aug. 2017     |
| • TeV Particle Astrophysics (TeVPA) 2017                            | Columbus, OH, Aug. 2017        |
| • Phenomenology Symposium (Pheno) 2017                              | Pittsburgh, PA, May 2017       |
| • Princeton Pheno & Vino Seminar                                    | Princeton, NJ, Apr. 2017       |
| • APS April Meeting 2017  | Washington, DC, Jan. 2017      |
| • MIT BSM Journal Club  | Boston, MA, Nov. 2016          |
| • TeV Particle Astrophysics (TeVPA) 2016                            | Geneva, Switzerland, Sep. 2016 |
| • Gamma Rays and Dark Matter Workshop                               | Obergurgl, Austria, Dec. 2015  |

- Phenomenology Symposium (Pheno) 2015

Pittsburgh, PA, May 2015

## SUMMER SCHOOLS

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- Prospects in Theoretical Physics (PiTP) Princeton, NJ, Jul. 2017
- Theoretical Advanced Study Institute (TASI) Boulder, CO, Jun. 2016
- Tri-Institute Summer School on Elementary Particles (TRISEP) Waterloo, Canada, Jul. 2015

## TEACHING EXPERIENCE

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*Course numbers refer to courses taught at Princeton.*

- PHY235 Introduction to Research in Physics Spring 2018
- PHY312 Experimental Physics Spring 2018
- PHY115 Physics for Future Leaders Fall 2017
- PHY104 General Physics II Spring 2016
- PHY406 Nuclear and Elementary Particle Physics Fall 2015
- PHY106 Advanced Physics (Electromagnetism) Spring 2015
- MAT201 Calculus III (Multivariable Calculus) Fall 2014, 2015
- PHY105 Advanced Physics (Mechanics) Fall 2014

## BROADER IMPACT

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- *Referee*, Phys. Rev. D, Phys. Rev. Lett. 2017 – Present
- *Member*, Princeton University Student Life Committee 2016 – 2018
- *Member*, Princeton Graduate Housing Advisory Board 2016 – 2018
- *Vice Chair*, Princeton Graduate College House Committee 2016 – 2018
- *Subject Representative*, Princeton Graduate Student Government Assembly 2013 – 2017
- *Organizer*, Princeton Physics Department Open House Committee 2015 – 2016
- *Chair*, Princeton Physics Graduate Student Council 2015 – 2018

## RESEARCH TRAINING

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- CERN Geneva, Switzerland  
*Visiting Student, CMS Experiment* Aug. – Sep. 2012
- DAMTP, University of Cambridge Cambridge, UK  
*Summer Student* Jun. – Jul. 2012
- Institute of Astronomy, University of Cambridge Cambridge, UK  
*Summer Student* Aug. – Sep. 2011
- CERN Geneva, Switzerland  
*Summer Student, CMS Experiment* Jun. – Jul. 2011