

SIDDHARTH MISHRA-SHARMA

726 Broadway, New York, NY 10003, USA

☎ +1 609-933-0103 ✉ sm8383@nyu.edu 🌐 github.com/smsharma

ACADEMIC APPOINTMENTS

New York University

Center for Cosmology and Particle Physics

Postdoctoral Associate

New York, NY, USA

Sep. 2018 – Present

EDUCATION

Princeton University

Ph.D. in Physics

Advisor: Mariangela Lisanti

Thesis: *Extragalactic Searches for Dark Matter Annihilation*

M.A. awarded in Jan. 2015

Princeton, NJ, USA

Sep. 2013 – Aug. 2018

University of Cambridge

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

Specializing in Theoretical Physics

B.A. (Hons.) in Natural Sciences (Physical)

Specializing in Physics

M.A. (Cantab) awarded in May 2016. *Note that this is an academic rank that may be given six years after the end of a first term at the University of Cambridge, and is not a postgraduate qualification.*

Cambridge, UK

Oct. 2012 – Jun. 2013

Oct. 2009 – Jun. 2012

PUBLICATIONS

*Except where indicated with an astrisk *, authors are listed in alphabetical order as per the standard in particle physics.*

15. J. Brehmer, K. Cranmer, S. Mishra-Sharma, F. Kling, G. Louppe, *Mining gold: Improving simulation-based inference with latent information* [Paper], *Machine Learning and the Physical Sciences Workshop at the 33rd Conference on Neural Information Processing Systems (NeurIPS)*
14. *J. Brehmer, S. Mishra-Sharma, J. Hermans, G. Louppe, K. Cranmer, *Mining for Dark Matter Substructure: Inferring subhalo population properties from strong lenses with machine learning*, *Astrophys.J.* **886** (2019) no.1, 49 [arXiv:1909.02005]
13. *L.J. Chang, S. Mishra-Sharma, M. Lisanti, M. Buschmann, N.L. Rodd, B.R. Safdi, *Characterizing the Nature of the Unresolved Point Sources in the Galactic Center*, [arXiv:1908.10874], Submitted to Phys.Rev. D
12. L.J. Chang, M. Lisanti, S. Mishra-Sharma, *A Search for Dark Matter Annihilation in the Milky Way Halo*, *Phys.Rev.* **D98** (2018) 123004 [arXiv:1804.04132]
11. *S. Mishra-Sharma, D. Alonso, J. Dunkley, *Neutrino masses and beyond- Λ CDM cosmology with LSST and future CMB experiments*, *Phys.Rev.* **D97** (2018) 123544 [arXiv:1803.07561]
10. DarkSide Collaboration, *Constraints on Sub-GeV Dark Matter-Electron Scattering from the DarkSide-50 Experiment*, *Phys.Rev.Lett.* **121** (2018) 111303 [arXiv:1802.06998]
9. DarkSide Collaboration, *Low-Mass Dark Matter Search with the DarkSide-50 Experiment*, *Phys.Rev.Lett.* **121** (2018) 081307 [arXiv:1802.06994]
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

• Michigan LCTP Brown Bag Seminar	Ann Arbor, MI, Jan. 2020
• Stony Brook University Particle Physics Seminar	Stony Brook, NY, Nov. 2019
• Minnesota High Energy Theory Lunchtime Seminar	Minneapolis, MN, Nov. 2019
• LSST Dark Matter Workshop	Chicago, IL, Aug. 2019
• SUSY 2019	Corpus Christi, TX, May 2019
• Phenomenology Symposium (Pheno) 2019	Pittsburgh, PA, May 2019
• Brown Astrophysics Seminar Series	Providence, RI, May 2019
• NYU CCPP Brown Bag Seminar	New York, NY, Apr. 2019
• Particles, Strings and Cosmology (PASCOS) 2018	Cleveland, OH, Jun. 2018
• Recontres de Blois 2018	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
• 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 ν 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

WORKSHOPS AND SCHOOLS

• <i>Gaia</i> Sprint 2019	Santa Barbara, CA, Mar. 2019
• Accelerating the Search for Dark Matter with Machine Learning	Leiden, Netherlands, Jan. 2018
• Prospects in Theoretical Physics (PiTP)	Princeton, NJ, Jul. 2017

- Theoretical Advanced Study Institute (TASI)
- Tri-Institute Summer School on Elementary Particles (TRISEP)

Boulder, CO, Jun. 2016
 Waterloo, Canada, Jul. 2015

TEACHING EXPERIENCE

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

- *Referee*, Phys. Rev. D, Phys. Rev. Lett, Comput. Phys. Commun, JHEP 2017 – Present

PRIZES AND HONOURS

- Department Teaching Award, Princeton Department of Physics 2018
Awarded for excellence in the role of Assistant in Introduction for courses taught at Princeton.
- 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.

RESEARCH TRAINING

- 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