Biographical Sketch

Dinesh Loomba
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EDUCATION

Ph.D., Physics, 1998, Boston University, Boston, MA. Thesis: *A measurement of the isotopic composition of the light elements helium to boron in cosmic rays.*

PROFESSIONAL APPOINTMENTS

Regents Lecturer, College of Arts and Sciences, Univ. of New Mexico, 2010 to 2013
Associate Professor of Physics, Physics and Astronomy Dept, Univ. of New Mexico, 2008 to present
Assistant Professor of Physics, Physics and Astronomy Dept, Univ. of New Mexico, 2002 to 2008
Research Assistant Professor**,** Physics and Astronomy Dept, Univ. of New Mexico, 2000 to 2002
Post-doctoral Fellow, Stanford Linear Accelerator Center, 1997 to 2000
Research Assistant, Boston University, 1989 to 1997

PUBLICATIONS

A sample of recent publications:

"Imaging 55Fe electron tracks in a GEM-based TPC using a CCD readout", N.S. Phan, E. R. Lee, D. Loomba, submitted to *Nucl. Instr. & Meth*. Also available at arXiv:1703.09883

"The novel properties of SF_6 for directional dark matter experiments", N.S. Phan, R. Lafler, R. J. Lauer, E. R. Lee, D. Loomba, J. A. J. Matthews, E. H. Miller, *JINST 12*, P02012, 2017. Also available at arXiv:1609.05249

"Low threshold results and limits from the DRIFT directional dark matter detector", J. B. R. Battat, A.C. Ezeribe, J.-L. Gauvreau, J.L. Harton, R. Lafler, E.R. Lee, D. Loomba, A. Lumnah, E.H. Miller, A. Monte, F. Mouton, S.M. Paling, N.S. Phan, M. Robinson, S.W. Sadler, A. Scharff, F.G. Schuckman II, D.P. Snowden-Ifft, N.J.C. Spooner, N. Waldram, Astroparticle Physics 91, 65-74, 2017

"GEM-based TPC with CCD Imaging for Directional Dark Matter Detection", N.S. Phan, R. J. Lauer, E. R. Lee, D. Loomba, J. A. J. Matthews, E. H. Miller, *Astroparticle Physics 84*, 82-96, 2016.

"Readout technologies for directional WIMP Dark Matter Detection", J. B. R. Battat, et al., *Physics Reports 662*, 1-42, 2016. Also available at arXiv:1610.02396

"First measurement of nuclear recoil head-tail sense in a fiducialised WIMP dark matter detector", J. B. R. Battat, E. Daw, A. C. Ezeribe, J.-L. Gauvreau, J. L. Harton, R. Lafler, E. R. Lee, D. Loomba, A. Lumnah, E. H. Miller, F. Mouton, A. Murphy, S. M. Paling, N. S. Phan, M. Robinson, S. W. Sadler, A. Scharff, F. G. Schuckman II, D. P. Snowden-Ifft, N. J. C. Spooner, *JINST 11,* P10019, 2016. Also available at arXiv:1606.05364

"Reducing DRIFT backgrounds with a submicron aluminized-mylar cathode", J. B. R. Battat, E. Daw, A. Dorofeev, A. C. Ezeribe, J. R. Fox, J.-L. Gauvreau, M. Gold, L. Harmon, J. L. Harton, *R. Lafler, *J. M. Landers, R. J. Lauer, E. R. Lee, D. Loomba, A. Lumnah, J. A. J. Matthews, *E. H. Miller, F. Mouton, A. Murphy, S. M. Paling, *N. Phan, S. W. Sadler, A. Scharff, F. G. Schuckman II, D. P. Snowden-Ifft, N. J. C. Spooner, D. Walker, *Nucl. Instr. & Meth. A794*, 33-46, 2015.

"Radon in the DRIFT-II directional dark matter TPC: emanation, detection and mitigation", J. B. R. Battat, J. Brack, E. Daw, A. Dorofeev, A. C. Ezeribe, J. R. Fox, J.-L. Gauvreau, M. Gold, L. Harmon, J. L. Harton, *J. M. Landers, E. R. Lee, D. Loomba, J. A. J. Matthews, *E. H. Miller, A. Monte, A. Murphy, S. M. Paling, *N. Phan, M. Pipe, M. Robinson, S. W. Sadler, A. Scharff, D. P. Snowden-Ifft, N. J. C. Spooner, S. Telfer, D. Walker, D. Warner, L. Yuriev, *JINST, 9,* P11004, 2014.

"Long-term study of backgrounds in the DRIFT-II directional dark matter experiment", J. Brack, E. Daw, A. Dorofeev, A. C. Ezeribe, J. R. Fox, J.-L. Gauvreau, M. Gold, L. Harmon, J. L. Harton, *R. Lafler, *J. M. Landers, R. J. Lauer, E. R. Lee, D. Loomba, J. A. J. Matthews, *E. H. Miller, A. Monte, A. Murphy, S. M. Paling, *N. Phan, M. Pipe, M. Robinson, S. Sadler, A. Scharff, D. P. Snowden-Ifft, N. J. C. Spooner, S. Telfer, D. Walker, L. Yuriev, *JINST 9,* P07021, 2014.

"A review of the discovery reach of directional Dark Matter detection", F. Mayet, A.M. Green, J.B.R. Battat, J. Billard, N. Bozorgnia, G.B. Gelmini, P. Gondolo, B.J. Kavanagh, S.K. Lee, D. Loomba, J. Monroe, B. Morgan, C.A.J. O'Hare, A.H.G. Peter, *N.S. Phan, S.E. Vahsan, *Physics Reports 627*, 1-49, 2016

"First background-free limit from a directional dark matter experiment: Results from a fully fiducialised DRIFT detector", J.B.R. Battat, et al. (DRIFT-II collaboration), Physics of the Dark Universe 9-10, pp1-7, 2015.

"First measurement of the head–tail directional nuclear recoil signature at energies relevant to WIMP dark matter searches", S. Burgos, E. Daw, J. Forbes, C. Ghag, M. Gold, C. Hagemann, V. A. Kudryavtsev, T. B. Lawson, D. Loomba, P. Majewski, D. Muna, A. Murphy, G. G. Nicklin, S. M. Paling, A. Petkov, S. J. S. Plank, M. Robinson, *N. Sanghi, D. P. Snowden-Ifft, N. J. C. Spooner, *J. Turk, E. Tziaferi, *Astroparticle Physics 31*, 261-266, 2009.

SYNERGISTIC ACTIVITIES

A sample of recent talks:

Invited Talk, The APS 4 Corners Annual Meeting, Salt Lake, 2018 (won the "Spherical Cow Award" for the best non-student talk)

Invited Talk, The 26th International Workshop on Weak Interactions and Neutrinos, Irvine, 2017

Department Seminar, Physics Dept., Duke University, October 2016.

Invited talk at the Martin Perl Symposium, SLAC, Menlo Park, CA, February 2016

HEP Department Seminar, Argonne National Lab, January 2016.

Invited lecture in Dave Nygren's course "Great Discoveries and the Art of Experiment", at UT Arlington in March 2015

Gas Detector Development Group/RD51 Collaboration Seminar, CERN, Geneva, Dec. 2014

Invited Talk, SLAC Summer Institute on "Shinning Light on Dark Matter", August 2014

Plenary Talk, Astroparticle Physics (joint TeVPA/IDM) Conference, Amsterdam, June 2014

Plenary Talk, Particle Physics and Cosmology Workshop, Deadwood, July 2013

2 talks at the CYGNUS2013 4th Workshop on Directional Detection of Dark Matter, Toyama, June 2013

Invited talk, Icecube Particle Astrophysics Conference, Madison, May 2013

Public Talk, New Mexico for Science and Reason Association, Oct. 2009

Public Talk, KNME Science Café at the Atomic Museum, Sep. 2008

Also taught several courses on cosmology for K-12 teachers and senior citizens

Other:

Served on the international organizing committees for the CYGNUS directional dark matter workshops: Cygnus2017 (Xichang, China), Cygnus2015 (Los Angeles, CA) and Cygnus2013 (Toyama, Japan)

Proposal reviewer for NSF, served on panels for NSF, DOE and LANL (LDRD program).