

Kevin R. Labe

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Education

- University of Chicago** PhD, Physics, 2017 (anticipated). Advisor: Edward Blucher.
Chicago, IL *Tests of Lorentz Symmetry at the Sudbury Neutrino Observatory*
MS, Physics, 2012.
- Swarthmore College** BA, Physics, High Honors, 2011.
Swarthmore, PA BA, Mathematics, 2011.
- Montgomery High School Graduated with Honors, 2007.
Skillman, NJ

Research Experience

- Research Assistant, SNO+ Experiment** 2013 - 2017
Designed and implemented a software trigger system and a nearline monitoring framework. Developed a likelihood analysis for a nucleon decay search. Set up grid computing resources in the US and assisted in network administration.
- Research Assistant, Physics Department, Swarthmore College** 2010
Investigated whether Lorentz violations could explain experimental anomalies in the neutrino sector. Basis for undergraduate thesis. Advisor: Matthew Mewes.
- SULI Intern, Princeton Plasma Physics Laboratory** Summer 2009
Worked on the Magnetic Reconnection Experiment, studying the effect of magnetic field perturbations on reconnection. Advisor: Masaaki Yamada.
- Research Assistant, Swarthmore Spheromak Experiment** Summer 2008
Designed, machined, and assembled plasma probes. Advisor: Michael Brown.

Teaching Experience

- Associate Director, Physical Sciences Division Masters Program, University of Chicago** 2016 - 2017
Assisted director in organizing admissions, orientation, and advising students.
- Teaching Assistant, Physics Department, University of Chicago** 2011 - 2015
Led recitation and laboratory sections; and graded homework, lab reports, and exams for nine quarters (three years) with experience in honors and non-honors introductory sequences and intermediate quantum mechanics. Also organized a quantum foundations journal club when teaching QM.
- Grader, Physics Department, Swarthmore College** 2008 - 2010
Graded homework papers weekly.

Honors

- 2016. Winstein Travel Award.
- 2014. Robert Millikan/GAANN Fellowship.
- 2011. Phi Beta Kappa, Swarthmore Chapter.
- 2011. Heinrich W. Brinkmann Mathematics Prize.
- 2010. Pat Tarble Summer Research Fellowship.
- 2010. Associate Member, Sigma Xi, Swarthmore Chapter.
- 2007. National Merit Scholarship Finalist.
- 2007. Senior Academic Award in Mathematics, Montgomery High School.
- 2007. Senior Academic Award in German, Montgomery High School.

Publications

S. Andringa et al. "Current Status and Future Prospects of the SNO+ Experiment." *Adv High Energy Phys*, 2016. ArXiv 1508.05759.

Kevin R. Labe. Lorentz-Violating Models of Neutrino Oscillations. Swarthmore College, 2011.

Kevin R. Labe. "A New Lorentz-Violating Model of Neutrino Oscillations." Proceedings of the Fifth Meeting on CPT and Lorentz Symmetry. Singapore: World Scientific, 2011. ArXiv 1008.0105.

Contributed Talks

- 2015. "Nucleon Decay Search in SNO+ Water Phase using a Likelihood Approach." APS Division of Particles & Fields. Ann Arbor, MI.

Posters Presented

- 2016. "Tests of Lorentz Symmetry in SNO". 7th Meeting on CPT and Lorentz Symmetry, Bloomington, IN.
- 2014. "Supernova Detection in SNO+". Neutrino 2014, Boston, MA.
- 2010. "A New Lorentz-Violating Model of Neutrino Oscillations". 5th Meeting on CPT and Lorentz Symmetry, Bloomington, IN.
- 2008. "Effect of Current Loop Perturbations on Fast Reconnection in MRX". DPP Meeting of APS, Atlanta, GA.

Teaching

- 2015. Physics 235: Quantum Mechanics II. Recitation leader, grader; quantum foundations journal club.
- 2015. Physics 234: Quantum Mechanics I. Recitation leader, grader.
- 2013. Physics 143: Honors Waves, Optics, & Heat. Recitation leader, grader.
- 2013. Physics 142: Honors Introductory Electricity & Magnetism. Recitation leader, grader.
- 2012. Physics 141: Honors Introductory Mechanics. Lab instructor, recitation leader, grader.

- 2012. Physics 132: Electricity & Magnetism. Lab instructor.
- 2012. Physics 123: General Physics III. Lab instructor, recitation leader, grader.
- 2012. Physics 122: General Physics II. Lab instructor, recitation leader, grader.
- 2011. Physics 121: General Physics I. Lab instructor, recitation leader, grader.

Activities

- University of Chicago Wind Ensemble, 2011 - 2012.
- Swarthmore Wind Ensemble, 2007 - 2011.
- Swarthmore College Orchestra, 2011.
- Swarthmore Quiz Bowl, 2007 - 2010.
- German Exchange Participant, 2004.