

Curriculum Vitae

Kip Bishofberger

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Education:

2005: Ph.D., Physics, University of California, Los Angeles

Dissertation: *Successful Beam-Beam Tuneshift Compensation*

2000: M.S., Physics, University of California, Los Angeles

1996: B.S., Physics, Massachusetts Institute of Technology

Dissertation: *Analysis of Azimuthal Asymmetries in an Annular Gyrotron Electron Beam*

Academic Positions:

2005 – present: Technical Staff Member, Los Alamos National Laboratory
High-Power Electrodynamics Group

1998 – 2005: Graduate Student, University of California, Los Angeles

2001 – 2005: Research Assistant, Fermi National Accelerator Laboratory
Tevatron Department

2000 – 2002: Research Assistant, Fermi National Accelerator Laboratory
Advanced Accelerator Group

1998 – 2000: Teaching Assistant, University of California, Los Angeles

1996 – 1998: Technical Staff Member, University of California, Los Angeles

1994 – 1996: Research Assistant, MIT Plasma Science and Fusion Center
Waves and Beams Division

1993: Research Assistant, California Institute of Technology
Astrophysics Department

1992: Research Assistant, MIT Plasma Science and Fusion Center
Plasma Technology Division

1990: Research Assistant, University of California, San Diego
Materials Science Department

Awards and Honors:

UCLA Physics Department: Graduate Student Fellowship
UCLA Physics Department: Highest-ranking Teaching Assistant
Putnam Mathematical Competition: highest 10%
Research Science Institute (RSI): Outstanding Lecture Award
American Regional Mathematics League (ARML)
ARML Russian-Estonian Mathematical Exchange

Experiment Participation:

LANL High-Power Electrodynamics Group (ISR-6): 2005 – present
FNAL Tevatron Department: 2001 – 2005
FNAL A-Zero Photoinjector Facility: 2000 – 2003
UCLA Particle Beam Physics Laboratory (PBPL): 1996 – 1999
MIT Plasma Science and Fusion Center, Waves and Beams Division: 1994 – 1996

Professional Participation:

American Physical Society (APS): member 1996 – present
Young Physicists Panel (YPP): 2001 – present
Society of Physics Students, MIT chapter: President and Secretary: 1993-1996
Research Science Institute (RSI): 1990-1994

Outreach Participation:

2005: Interviewed by several students about being a physicist.
2005: Led discussion on mixing science and religion, quoted in final papers.
2003 – 2004: Lectured several groups of physicists and students on accelerator physics.
2003: Created and performed grade-school physics demonstrations at the Fermilab
Lederman Center.
2002 – 2004: Developed concept for interactive high-school accelerator demonstration.
2002: Tutored disadvantaged children in Chicago, IL for Partners in Education (PIE).
2002: Developed and performed demonstration “Light and Color” for second-grade class.
2002: Created and improved interactive physics demonstrations for grade-school classes.
2001 – 2002: Assisted with proposal to NSF to distribute particle-physics instructional kits.
2001 – 2004: Participated in several Young Physicist Panel (YPP) Outreach Program projects.
1997 – 2005: Tutored pro-bono numerous students on a variety of subjects.

Publications:

- K. Bishofberger, V. Shiltsev, and X. Zhang. **Compensation of Beam-Beam Tuneshift in the Tevatron.** Will be submitted to Physical Review Special Topics.
- K. Bishofberger *et al.* **The First Tevatron Electron Lens.** Will be submitted to Nuclear Instruments and Methods.
- K. Bishofberger. **Successful Beam-Beam Tuneshift Compensation.** Ph.D. Dissertation, University of California, Los Angeles 2005.
- V. Shiltsev *et al.* **Tevatron Beam-Beam Compensation Project Progress.** Particle Accelerator Conference 2005.
- X. Zhang *et al.* **The Experiments and Operation of the First Tevatron Electron Lens.** Particle Accelerator Conference 2005.
- V. Shiltsev *et al.* **Progress Report on Beam-Beam Compensation with Electron Lenses in Tevatron.** 29th ICFA Advanced Beam Dynamics Workshop: HALO 2003.
- X. Zhang *et al.* **Special Applications of Tevatron Electron Lens in Collider Operation.** Particle Accelerator Conference 2003.
- X. Zhang *et al.* **Upgrades of the Tevatron Electron Lens.** Particle Accelerator Conference 2003.
- K. Bishofberger *et al.* **Tune-Shift Compensation Using the Tevatron Electron Lens.** Particle Accelerator Conference 2003.
- K. Bishofberger. **FNPL Spectrometer Recalibration.** Fermilab Internal Document 2003.
- K. Bishofberger, V. Shiltsev, and X.L. Zhang. **Initial Results from the Tevatron Electron Lens.** Advanced Accelerators Concepts Workshop 2002.
- N. Barov *et al.* **Plasma Wakefield Experiments.** Advanced Accelerators Concepts Workshop 2002.
- A. Andriischin *et al.* **Test Results of the Magnetic System for the Tevatron Electron Lens.** European Particle Accelerator Conference 2002.
- E. Thrane *et al.* **Photoinjector Production of a Flat Electron Beam.** Linear Accelerator Conference 2002.

- X. Zhang *et al.* **Operation of the Beam Diagnostics System for Tevatron Electron Lens.** Beam Instrumentation Workshop 2002.
- V. Shiltsev *et al.* **First Experiments with Electron Lens.** Beam-Beam Workshop at Fermilab 2001.
- V. Shiltsev *et al.* **Beam-Beam Compensation in the Tevatron: Status Report.** Particle Accelerator Conference 2001 invited.
- L. Tkachenko *et al.* **Tevatron Electron Lens Magnetic System.** Particle Accelerator Conference 2001.
- N. Solyak, K. Bishofberger, and V. Shiltsev. **Electron Beam System of the Tevatron Electron Lens.** Particle Accelerator Conference 2001.
- K. Bishofberger *et al.* **Characterization of the Tevatron Electron Lens Magnetic System.** Particle Accelerator Conference 2001.
- N. Barov *et al.* **Ultra-High-Gradient Energy Loss by a Pulsed Electron Beam in a Plasma.** Particle Accelerator Conference 2001.
- A. Andriischin *et al.* **Magnetic Measurement Results of Tevatron Electron Lens.** Fermilab Internal Document. 2000.
- S. Anderson *et al.* **Commissioning of the Neptune Photoinjector.** Particle Accelerator Conference 1999.
- M. Hogan *et al.* **Measurements of High Gain and Intensity Fluctuations in a SASE Free-Electron Laser.** Physical Review Letters 80 (2) 289. 1998.
- J. Rosenzweig *et al.* **The Neptune Photoinjector.** Nuclear Instruments and Methods in Physics Research A 410, 437-451. 1998.
- M. Hogan *et al.* **High Gain SASE FEL Studies at UCLA.** Particle Accelerator Conference 1997.
- M. Hogan *et al.* **Measurements of High Gain and Noise Fluctuations in a SASE Free Electron Laser.** Workshop Towards X-ray Free Electron Lasers 1997 and Particle Accelerator Conference 1997.
- K. Bishofberger. **Analysis of azimuthal asymmetries in an annular gyrotron electron beam.** B.S. Dissertation, Massachusetts Institute of Technology 1996.