

Curriculum Vitae

WILLIAM FOX

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Education:

- 2009 Ph.D., MIT Dept of Physics
Plasma Science and Fusion Center
Thesis Completed May, 2009
- 2001 B.A., Princeton University, Physics
Senior Thesis: "Magnetohydrodynamic Surface Waves in Liquid Metal"

Positions:

- 2003-2005: Volunteer TA for Physics 123, "Laboratory Electronics"
Harvard University Extension School, Cambridge, MA
- 2001-2002: High School Math and Physics Teacher, Rato Bangala School,
Kathmandu, Nepal

Awards:

- 2005 Outstanding Student Paper, American Geophysical Union Fall
Conference
- 2003-2006 U.S. DoE Fusion Energy Sciences Graduate Fellowship
- 2002-2003 MIT Physics Department Graduate Fellowship
- 2001 Shenstone Experimental Thesis Prize, Princeton University
Magna cum laude, Phi Beta Kappa

Publications

Magnetic Reconnection - VTF Experiment, MIT Plasma Science and Fusion Center (Prof. Miklos Porkolab, Thesis Advisor; Prof. Jan Egedal, Research Advisor)

1. W. Fox. *Experimental Study of Current-Driven Turbulence During Magnetic Reconnection*. Ph.D. Dissertation, (May 2009).
2. W. Fox, M. Porkolab, J. Egedal, N. Katz, A. Le. "Laboratory observation of electron phase-space holes during magnetic reconnection", *Phys. Rev. Lett.* **101**, 255003 (2008).
3. N. Katz, J. Egedal, W. Fox, *et al* "Experiments on the propagation of plasma filaments" *Phys. Rev. Lett.* **101**, 015003. (2008).
4. J. Egedal, W. Fox, N. Katz, M. Porkolab, K. Reim, E. Zhang, "Laboratory observation of spontaneous magnetic reconnection", *Phys. Rev. Lett.* **98**, 015003. (2007).
5. J. Egedal, M. Oieroset, W. Fox and R.P. Lin, "In situ discovery of an electrostatic potential, trapping electrons and mediating fast reconnection in the Earth's magnetotail", *Phys. Rev. Lett.* **94**, 025006. (2005).
6. J. Egedal, W. Fox, M. Porkolab and A. Fasoli, "Eigenmode response to driven magnetic reconnection in a collisionless plasma" *Physics of Plasmas*, **12**, 052107. (2005).
7. R. Kulsrud, H. Ji, W. Fox, and M. Yamada, "An electromagnetic drift instability in the magnetic reconnection experiment and its importance for magnetic reconnection", *Phys. Plasmas* **12**, 082301 (2005).
8. A. Stark, W. Fox, J. Egedal, O. Grulke, and T. Klinger. "Laser-Induced fluorescence measurement of the ion-energy-distribution function in a collisionless reconnection experiment", *Phys. Rev. Lett.* **95**, 235005 (2005).
9. J. Egedal, W. Fox, M. Porkolab and A. Fasoli, "Experimental evidence of fast reconnection via trapped electron motion", *Physics of Plasmas*, **11**, 2844, (2004).
10. J. Egedal, W. Fox, E. Bolonohy and M. Porkolab, "Kinetic simulation of the VTF magnetic reconnection experiment", *Computer Physics Communications* **164**, 29. (2004)

DIII-D Fusion Experiment, General Atomics, San Diego, CA (advisor: Dr. Craig Petty, General Atomics)

11. C.C. Petty, W.R. Fox, T.C. Luce, M.A. Makowski and T. Suzuki. "Analysis of current drive using MSE polarimetry without equilibrium reconstruction." *Nucl. Fusion* **42**, 1124. (2002).
12. C.C. Petty, R. Prater, J. Lohr, T.C. Luce, W.R. Fox, R.W. Harvey, J.E. Kinsey, L.L. Lao and M.A. Makowski. "Detailed measurements of the electron cyclotron current drive efficiency on DIII-D" *Nucl. Fusion* **42**, 1366. (2002).

Liquid Metal Surface Waves, Princeton Plasma Physics Lab, Princeton, NJ.
Undergraduate Thesis Advisor: Dr. Hantao Ji, PPPL.

13. W. Fox *Magnetohydrodynamic Surface Wave in Liquid Metal*. A.B. Thesis. Princeton University Physics Department. (2001).
14. H. Ji, W. Fox, D. Pace, and H. Rappaport, "Study of magnetohydrodynamic surface waves in liquid gallium", *Phys. Plasmas* **12**, 012102 (2005).

Invited Talks

1. "Laboratory Studies of Electrostatic Fluctuations Driven During Magnetic Reconnection" April 2008, University of Maryland Plasma Colloquium

Contributed Talks

1. "Magnetotail reconnection with guide field" 2005 American Geophysical Union Fall Meeting
2. "Laboratory Observation of Large-Amplitude Electrostatic Fluctuations Driven by Magnetic Reconnection," 2007 AGU Fall Meeting