

Kyle Morrison

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Education

Princeton University, 1996 – present

Ph.D. in Plasma Physics (in progress),
Experimenting with non-neutral, pure-electron plasma dynamics as an indicator of background gas pressure.

University of Florida,

B.S., Physics, high honors, 1996.
B.A., Mathematics, honors, 1996.
GPA: 3.72

Academic Experience

Research Assistant, Princeton University, 1996 – present

- Showed that the expansion of the EDG device electron plasma agrees with classical predictions at moderate (high vacuum) pressures.
- Assembled a standard, on-axis temperature diagnostic for EDG, and assisted in the design and testing of a vastly improved density diagnostic.
- Constructed and repaired control and diagnostic circuitry for MRX, CDX-U, and EDG.
- Supervised first-year graduate students performing projects on EDG.
- Streamlined and corrected the EDG data analysis codes.
- Composed and edited 1 refereed paper, 2 conference papers, and 4 conference posters, and edited various other papers and research proposals.
- Tested a Fourier-transform spectrometer for use on the CDX-U device.
- Measured Doppler-broadened spectral lines in the MRX device plasma.

Teaching Assistant, University of Florida, 1996

- Instructed 60 students in an introductory physics lab:
Assisted students with their experiments and graded papers.

Undergraduate Research, University of Florida, 1995-1996

- Conducted large simulations of chemical reactions.
- Wrote several programs to visualize the simulated reactions.

Leadership Experience

Mailroom Manager at the graduate student dormitory at Princeton, 1998-1999

- Improved the efficiency of the yearly reorganizations and daily sorting procedures.
- Created a system for managing the 1-year grace period for address changes.

Representative in the Graduate Student Government at Princeton, 1998-2000

- Assembled a team to write a new Constitution, helped wage a political battle to get it enacted, and crafted the compromise resolution that broke the stalemate.
- Collaborated with the Undergraduate Student Government to effect change in the campus fire safety regulations.

Skills

- Computer:** Windows, Macintosh, Unix, Linux environments.
Programmed in IDL, IBM's Data Explorer (DX), and Fortran.
- Technical:** Experience with ultra-high-vacuum systems, measurement and test equipment, diagnostic design and assembly, and data analysis.

Refereed Publications

- K. A. Morrison, R. C. Davidson, S. F. Paul, E. A. Belli and E. H. Chao, "Expansion Rate Measurements at Moderate Pressure of Nonneutral Electron Plasmas in the Electron Diffusion Gauge Experiment," *Physics of Plasmas* **8**, 3506 (2001).
- E. H. Chao, R. C. Davidson, S. F. Paul, and K. A. Morrison, "Effects of Background Gas Pressure on the Dynamics of a Nonneutral Electron Plasma Confined in a Malmberg-Penning Trap," *Physics of Plasmas* **7**, 831 (2000).

Conference Papers

- K. A. Morrison, S. F. Paul, R. C. Davidson, "Measurements of Plasma Expansion due to Background Gas in the Electron Diffusion Gauge Experiment," *American Institute of Physics Conference Proceedings* **692**, in press (2003).
- S. F. Paul, K. A. Morrison, R. C. Davidson, "Examination of $m=1$ Diocotron Mode Growth at Low Electron Densities," *American Institute of Physics Conference Proceedings* **692**, in press (2003).
- K. A. Morrison, R. C. Davidson, S. F. Paul, and T. G. Jenkins, "Investigation of the Expansion Rate Scaling of Plasmas in the Electron Diffusion Gauge Experiment," *American Institute of Physics Conference Proceedings* **606**, 416 (2002).
- T. G. Jenkins, K. A. Morrison, R. C. Davidson and S. F. Paul, "Large-Amplitude $m=1$ Diocotron Mode Measurements in the Electron Diffusion Gauge Experiment," *American Institute of Physics Conference Proceedings* **606**, 298 (2002).
- S. F. Paul, K. Morrison, R. C. Davidson, and T. G. Jenkins, " $m=1$ Diocotron Mode Damping in the Electron Diffusion Gauge Experiment," *American Institute of Physics Conference Proceedings* **606**, 305 (2002).
- E. H. Chao, R. C. Davidson, S. F. Paul, and K. A. Morrison, "Effects of Background Gas Pressure on Pure Electron Plasma Dynamics in the Electron Diffusion Gauge Experiment," *American Institute of Physics Conference Proceedings* **498**, 278 (1999).