

## E. Alec Johnson

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Department of Mathematics  
480 Lincoln Drive  
Madison, WI 53706-1388

Office: 608-262-3546; Fax: 608-263-8891  
E-mail: [ejohnson@math.wisc.edu](mailto:ejohnson@math.wisc.edu)  
URL: <http://www.math.wisc.edu/~ejohnson/>

**Research Interests:** fast magnetic reconnection in collisionless space plasmas, wave-propagation and discontinuous Galerkin shock-capturing methods, domain-decomposition multiscale methods

### Education

- Ph.D. Mathematics (computational focus), UW-Madison, December 2009 (expected).
- Budapest Semesters in Mathematics, spring 2003.
- B.A. Mathematics, St. Olaf College, 1997, *summa cum laude*.

### Awards

- VIGRE Fellowship, UW-Madison, Spring 2008.
- Wisconsin Space Grant Consortium Graduate Fellowships, 2006-07, 2007-08, 2008-09.

### Selected Publications

- E.A. Johnson and J.A. Rossmannith, *Collisionless magnetic reconnection in a five-moment two-fluid electron-positron plasma*, Proceedings for HYP2008, November 2008.
- *Discontinuous Galerkin Simulations of the Collisionless Five-moment and Ten-moment Two-fluid Plasma Models*, Proceedings of the 17th Annual Wisconsin Space Conference, Wisconsin Space Grant Consortium, 2008.
- *Brio-Wu Shock Problem Computations for a Collisionless Two-fluid Plasma Model*, Proceedings of the 17th Annual Wisconsin Space Conference, Wisconsin Space Grant Consortium, 2007.
- E.A. Johnson, C.W. Dorsey, and R.W. Jacobel, *An Image-Derived Velocity for Ice Flow Near Siple Dome, West Antarctica*. EOS Transactions American Geophysical Union, 78 (46), p. F249, 1997.

### Selected Presentations

- *Fast magnetic reconnection in isotropic pair plasma*, CS&E 2009.
- *Shock-capturing schemes for a collisionless two-fluid plasma model*, Sandia National Labs, 2007.
- *Computational continuum mechanics*, High School Math Night, UW-Madison, December 2007.

### Employment History

- **Copy Editor**, *Communications in Mathematical Sciences*, edited by Shi Jin (June 2007 – May 2008)
- **Teaching Assistant**, UW-Madison (2003 to present)
- **High School Teacher**, Trinity School at River Ridge, Bloomington, MN (2001-2002)
- **Software Developer**, CES International, Plymouth, MN (1998-2001)
- **High School Teacher**, Walnut Ridge Baptist Academy, Waterloo, IA (1997-1998)
- **Summer Research**, Center for Geophysical Studies of Ice and Climate, St. Olaf College (1994-97)

**Software Experience:** C++, C, Fortran95, IDL, Matlab, Maple, UNIX, shell, perl, subversion, L<sup>A</sup>T<sub>E</sub>X