

## BRIAN T. KRESS

Research Assistant Professor  
Department of Physics and Astronomy,  
Dartmouth College, Hanover, NH.

### Education:

2002: Ph.D. in Physics, Dartmouth College, Hanover, NH.  
1997: M.S. in Physics, State Univ. of NY at Binghamton, Binghamton, NY.  
1992: B.S. in Physics, State Univ. of NY College at Fredonia, Fredonia, NY.

### Professional Activities:

October 2005 – present: Research Assistant Professor, Department of Physics and Astronomy, Dartmouth College  
October 2005 – October 2007: Research Faculty, Department of Physics and Astronomy, Dartmouth College  
October 2002 - October 2005: Research Associate, Department of Physics and Astronomy, Dartmouth College

### Research Summary:

Current Research is primarily focused on development of numerical models of the Earth's radiation belts and energetic particle populations in the magnetosphere. Additional projects include the incorporation of an anisotropic pressure model into the Lyon-Feder-Mobarry (LFM) global MHD magnetospheric simulation code.

Ph.D. Thesis: *Computations of Wall-Bounded Two-Dimensional Turbulence*; Thesis Adviser: David C. Montgomery.

Masters Thesis: *Tests for CP Violation and non V-A coupling in top quark decay*. Thesis Adviser: Charles A. Nelson.

### Selected Publications:

Kress, B.T., M. K. Hudson, M. D. Looper, J. Albert, J. G. Lyon, C. C. Goodrich, Global MHD Test-Particle Simulations of >10 MeV Radiation Belt Electrons During Storm Sudden Commencement, *J. Geophys. Res.*, 112., A09215, doi:10.1029/2006A012218, 2007.

Sheperd, S. G. and B. T. Kress, Störmer theory applied to magnetic spacecraft shielding, *Space Weather*, 5, No. 4, S04001, doi:10.1029/2006SW000273., 2007.

Kress, B. T., M. K. Hudson, and P. L. Slocum, Impulsive solar energetic ion trapping in the magnetosphere during geomagnetic storms, *Geophys. Res. Lett.*, 32, 6, Mar. 2005.

Hudson, M. K., B. T. Kress, J. E. Mazur, K. L. Perry, and P. L. Slocum, 3D modeling of shock-induced trapping of solar energetic particles in the Earth's magnetosphere, *J. of Atmospheric & Solar Terrestrial Phys.*, 66, 15-16, 1389-1397, Oct.-Nov. 2004.

Kress, B. T., M. K. Hudson, K. L. Perry, and P. L. Slocum, Dynamic modeling of geomagnetic cutoff for the 23-24 November 2001 solar energetic particle event, *Geophys. Res. Lett.*, 31, 4, Feb. 2004.

Kress B. T. and D. C. Montgomery, Pressure determinations for incompressible fluids and magnetofluids, *J. Plasma Phys.* 64, 371-377, 2001.

Kress, B. T. and D.C. Montgomery, Incompressible pressure determinations, *Proc. 27th EPS Conference on Contr. Fusion and Plasma Phys.* Budapest, Ed. by K. Szego, T.N. Todd, S. Zoletnik, Vol. 24B, 109, 2000.

Nelson, C. A., B. T. Kress, M. Lopes, T. P. McCauley, Importance of tests for the complete Lorentz structure of the  $t \rightarrow W+b$  vertex at hadron colliders, *Phys. Rev. D*, 57, 5923-5926, 1998.

Nelson, C. A., B. T. Kress, M. Lopes, T. P. McCauley, General tests for  $t \rightarrow W+b$  couplings at hadron colliders, *Phys. Rev. D*, 56, 5928-5944. 1997.