

**Brian Laughman**  
**NWRA/CoRA Division**

**Professional Preparation:**

- University of Notre Dame Physics, B.S. 2001
- University of Colorado, Boulder Physics, Ph. D. 2009
- NWRA/CoRA Division Atmospheric Dynamics, 2009 – 2011

**Appointments:**

- NWRA/CoRA, research scientist 2009 – present
- NWRA/CoRA, graduate student 2003 – 2009
- University of Colorado, Department of Geophysics, graduate student 2002
- University of Notre Dame, Atomic Physics, undergraduate student 2000-2001
- University of Notre Dame, Nuclear Physics, undergraduate student 1999-2000

**Publications:**

1. Laughman, B., D. C. Fritts, and J. Werne: **Comparisons of predicted bore evolutions by the Benjamin-Davis-Ono and Navier-Stokes equations for idealized mesopause thermal ducts**, *J. Geophys. Res.*, **116**, D02120, doi:10.1029/2010JD014409, 2011.
2. Laughman, B., D. C. Fritts, and J. Werne: **Numerical simulation of bore generation and morphology in thermal and Doppler ducts**, *Ann. Geophys., SpreadFEx special issue*, **27**, 511-523, 2009
3. Fritts, D. C., M. A. Abdu, B. R. Batista, I. S. Batista, P. P. Batista, R. Buriti, B. R. Clemesha, T. Dautermann, E. de Paula, B. J. Fechine, B. Fejer, D. Gobbi, J. Hasse, F. Kamalabadi, B. Laughman, P. P. Lima, H.-L. Liu, A. Medeiros, D. Pautet, D. M. Riggin, F. Sao Sabbas, J. H. A. Sobral, P. Stamus, H. Takahashi, M. J. Taylor, S. L. Vadas, and C. Wrasse, 2008a: **The Spread F Experiment (SpreadFEx): Program overview and first results**, *Earth Planets Space*, **61**, 411-430, 2009.
4. Fechine, J., C. M. Wrasse, H. Takahashi, A. F. Medeiros, P. P. Batista, B. R. Clemesha, L. M. Lima, D. Fritts, B. Laughman, M. J. Taylor, P. D. Pautet, M. G. Mlynczak, and J. M. Russel, 2008: **Mesospheric bore event during SpreadFEx campaign**, *Ann. Geophys., SpreadFEx special issue*, **27**, 1399-1406, 2009.

5. Laughman, B., D. C. Fritts, J. Werne, D. Simkhada, and M. J. Taylor: **Interpretation of simultaneous occurrences of aligned and mis-aligned responses in adjacent airglow layers: Numerical simulations**, *J. Geophys. Res.*, *in preparation*, 2011.
6. Taylor, M. J., D. Simkhada, D. C. Fritts, B. Laughman, and A. Liu: **Interpretation of simultaneous occurrences of aligned and mis-aligned responses in adjacent airglow layers: Observations**, *J. Geophys. Res.*, *in preparation*, 2011.
7. M. C. Pyle, A. Garcia, E. Tatar, J. Cox, B. K. Nayak, S. Triambak, B. Laughman, A. Komives, L. O. Lamm, T. Finnessy, L. D. Knutson and P. A. Voytas, **Re-validation of the isobaric mass multiplet equation**, *Phys. Rev. Lett.* 88, 122501-1 (2002)
8. V. Gerginov, B. Laughman, D. DiBerardino, R. J. Rafac, S. T. Ruggiero, C. E. Tanner, **Diode Lasers for Fast-beam Laser Experiments**, *Optics Communications* 187(2001) 219-230, 1 Jan. 2001

### **Synergistic Activities:**

- Engaged in collaborative efforts to apply model results to observation
- Worked on the continuing development of the anelastic model used by the CoRA group
- Added specific modeling capabilities to the Boussinesq model used by the CoRA group

### **Collaborators (last 48 months):**

- M. Abdu, B. Batista, I. Batista, P. Batista, R. Buriti, B. Clemesha, T. Dautermann, E. de Paula, B. Fechine, J. Fechine, B. Fejer (USU), D. Fritts (NWRA/CoRA), D. Gobbi, J. Haase, F. Kamalabadi, P. Lima, H. Liu, T. Lund (NWRA/CoRA), A. Medeiros, M. Mlynczak, D. Pautet, D. Riggan (NWRA/CoRA), J. Russel, F. Sao Sabbas, D. Simkhada (USU), J. H. A. Sobral, P. Stamus (NWRA/CoRA), H. Takahashi, M. Taylor (USU), S. Vadas (NWRA/CoRA), J. Werne (NWRA/CoRA), C. Wrasse

### **Graduate Advisors:**

- Dave Fritts, NWRA/CoRA
- John Wahr, University of Colorado

### **Thesis Advisor:**

- Dave Fritts, NWRA/CoRA