

## Benjamin F. Akers

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Dept. of Math. and Stat.  
2950 Hobson Way  
Air Force Institute of Tech.  
WPAFB, OH 45433-7765

Phone: (937) 255-3636  
benjamin.akers@afit.edu

### Positions Held

Assistant Professor, Air Force Institute of Technology, July 2011-Present

Research Assistant Professor, University of Illinois-Chicago, Aug. 2008- May 2011

### Education

Ph.D. Mathematics, University of Wisconsin-Madison, 2008  
**Advisor:** Paul Milewski

M.A. Mathematics, University of Wisconsin-Madison, 2005

B.S. Applied Mathematics, The Pennsylvania State University, 2003

### Current Projects

Traveling water waves with surface tension : stability and ripples  
*with D.P. Nicholls*

The Benjamin-Ono limit of the Akers-Milewski equation

Wilton ripples in models for water waves  
*with Wenxuan Gao*

### Selected Publications

Akers, B., Nicholls, D. P., "Spectral stability of deep two-dimensional gravity water waves: repeated eigenvalues" *submitted*

Akers, B., "The generation of capillary-gravity waves by a surface pressure forcing," *in press, Math. Com. Sim.*

Akers, B., Milewski, P.A. (2010) "Dynamics of three-dimensional gravity-capillary solitary waves in deep water," *SIAM J. Appl. Math.* **70:7**, 2390–2408.

Akers, B., Nicholls, D.P. (2010) "Traveling waves with gravity and surface tension," *SIAM J. Appl. Math.* **70:7**, 2373–2389.

Akers, B., Milewski, P.A. (2009) "A model equation for wavepacket solitary waves arising from gravity-capillary flows," *Stud. Appl. Math.* **122**, 249–274.

Akers, B. (2008) "Model equations for gravity-capillary waves," *UW-Madison, PhD Thesis.*

Akers, B., Milewski, P.A. (2008) "A stability result for solitary waves in nonlinear dispersive equations," *Commun. Math. Sci.* **6:3**, 791–797.

Akers, B., Milewski, P.A. (2008) “Model equations for gravity-capillary waves in deep water,” *Stud. Appl. Math.* **121** 49–69.

Akers, B., Bokhove, O. (2008) “Hydraulic Flow through a Channel Contraction: Multiple Steady States,” *Phys. Fluids* **20:5**, 056601

Akers, B., Belmonte, A. (2006) “Impact dynamics of a solid sphere falling into a viscoelastic micellar fluid,” *J. Non-Newtonian Fluid Mech.* **135**, 97–108 .

Akers, B. (2005) “Shallow Water Flow Through a Contraction,” *Proceedings of the GFD Program*, Woods Hole Oceanographic Institution. 97–117.

B. Akers, S. Bohun, P. Gibson, A. Hofinger, M. Lamoureux, J. Lobb, B. Mawby and M. Roberts. (2004) “General statistical design of an experimental problem for harmonics,” *Can. Appl. Math. Q.*, **12(4)**, 415–437.

### Selected Presentations

#### *Water waves with surface tension*

- University of Toledo (2010)
- Air Force Institute of Technology (2010)
- Northwestern University (2010)
- University of California Berkeley (2010)

#### *Stability of traveling water waves : resonant perturbations*

- SIAM NW10, Philadelphia (2010)
- Nonlinear Waves, Beijing (2010)
- Drexel University (2010)

#### *Applications of perturbation series*

- AMS Eastern Sectional, Pennsylvania State University (2009)
- University of Wisconsin - Madison (2009)
- University of Illinois - Chicago (2009)

#### *Taylor, Stokes, and Wilton: the power of series*

- Mathfest, Portland, OR (2009)

#### *Dynamics of 3D Gravity-Capillary Solitary Waves.*

- IMACS - Nonlinear Evolution Equations and Wave Phenomena, UGA (2009)
- Waves in Fluids II, Paraty, Brazil (2008)

#### *America's Next Top Model Equation.*

- McMaster University (2008)
- University of Illinois - Chicago (2008)