

# Curriculum Vitae

## General Information:

Name: Keith Mertens

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Colorado State University  
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## Education:

1. St Charles Community College, Associate of Liberal Arts (1998)
2. University of New Mexico, B.S. Physics/B.S. Applied Math (2002)
3. University of New Mexico, M.S. Math (2005)
4. Colorado State University, Ph.D. Math (expected Spring 2008)

## Publications:

1. *Braiding Patterns on an Inclined Plane*, K.Mertens, V. Putkaradze, P Vorobieff, *Nature* **430**, 165, 2004
2. *Morphology of a Stream Flowing Down an Inclined Plane. Part 1: Braiding*, K. Mertens, V. Putkaradze, P Vorobieff, *J.Fluid Mech.* **531**, 49-58, 2005
3. *Theory and Experiment for directed Self-Assembly of Nano-Particles*, K. Mertens, V. Putkaradze, D. Xia, S. Brueck, *J. App. Phys.* **98**, 034309, 2005
4. *Stream Meandering*, K. Mertens, V. Putkaradze, B Birnir, P. Vorobieff (under consideration PNAS)
5. *Morphology of a Stream Flowing Down an Inclined Plane. Part2: Stream Meandering*, K. Mertens, V. Putkaradze, B Birnir, P. Vorobieff (in preparation)
6. *Amplitude Equation for Under Water Sand Ripples in One Dimension*, T.Schnipper, K. Mertens, C. Ellegaard, T. Bohr (in preparation)

## Invited Lectures:

Niels Bohr Institute (Fluid Braids), Denmark, 12/2003

University Twente (Fluid Braids), Holland, 12/2003

University Paris 6 (Fluid Braids), France, 12/2003

Complex Motion in Fluids (Directed Self-Assembly DSA), Denmark, 8/2004

Los Alamos National Labs (LANL), Center for Nonlinear Studies (CNLS)

(Gravity Driven Fluid Flows), Los Alamos NM , 8/2006

American Mathematical Society (AMS)(Meandering Streams), Tucson AZ, 4/2007

Complex Motions in Fluids II. (Meandering Streams) 8/2007

## Conferences/Talks:

Division of Fluid Dynamics Meeting, Poster Presentation (Fluid Braids), Dallas TX, 11/2002

Division of Fluid Dynamics Meeting (Fluid Braids), Seattle WA, 11/2004  
Los Alamos Days, University of Arizona (Fluid Braids), Tuscon AZ, 1/2005  
Masters Defense, University of New Mexico (Fluid Braids) Albuquerque NM, 7/2005  
Greenslopes, Colorado State University (Free Surface Flows), Ft Collins CO, 10/2005  
Video Presentation, DFD Gallery of Fluid Motion (Oxygen Drops), Chicago IL, 11/2005  
Division of Fluid Dynamics Meeting (Meandering), Tampa Fl, 11/2006  
Greenslopes, Colorado State University (Meandering Streams), Ft Collins CO, 2/2007

### **Teaching Experience:**

Astronomy 101 University of New Mexico (UNM) (Fall 2001)  
Conceptual Physics 102 UNM (Spring 2002, Fall 2002, Spring 2003)  
Calculus 180 UNM (Spring 2003)  
Calculus 261 Colorado State University (CSU) (Fall 2005)  
Calculus 141 CSU (Spring 2006, Fall 2006)  
Fun and Discovery Summer School CSU (Summer 2006, Summer 2007)  
Calculus 160 CSU (Spring 2007)

### **Internship:**

Niels Bohr Institute/Technical University of Denmark, (Aug2003-Jan2004)

### **Awards/Recognition:**

Kappa Mu Epsilon National Mathematics Honors Society, (2000-2002)  
Graduate Student Teaching Assistantship, UNM (Spring 2003)  
Graduate Student Research Assistantship, UNM (Spring 2004-Summer 2005)  
Collegiate All-American Scholars Award, (May 2004)  
Daily Lobo, (July8-July14, 2004)  
Albuquerque Journal, (July 9, 2004)  
American Institute of Physics, AIP News Updates, (July 14, 2004)  
American Physics Society, Physics News in 2004, (February 2005)  
Campus News (UNM), (March 14, 2005)  
DFD News, (Spring/Summer 2005)  
Quantum Research Publications, (December 2005)  
Graduate Student Teaching Assistantship, CSU (Fall 2005-Fall 2007)  
Mathematics Summer Research Fellowship, CSU (Summer 2007)  
The National Dean's List (May 2007)