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CURRICULUM VITAE

Education:

University of California, Los Angeles, California (UCLA) 1992 - 1996
Ph.D. in Applied Mathematics (1996)
Specialization: Applied Partial Differential Equations
Dissertation: Variational Inequality Formulation of Dynamic Crack Problems
California State University, Los Angeles (CSULA) 1989 - 1992
B.S. Chemical Physics (1992)
Specialization: Computational Chemistry
Pasadena City College (PCC) 1986 - 1989

Research Experience:

Current Research: Department of Mathematics, CSULA, Fall 2001-Present
I am interested in developing an existence theory for hyperbolic variational inequalities without a constraint on the time derivative of the solution.

Post-Doctoral Research: Department of Mathematics, UCLA, Summer 1996-Spring 2001
I researched the extension of the methods developed in the thesis to the case of plane strain stress and the case of bounded media theoretically and numerically. Also researched boundary element methods for pseudodifferential operators.

Doctoral Research: Department of Mathematics, UCLA, 1993 - 1996
(Advisor: Prof. Gregory Eskin) I considered the application of variational inequalities to dynamic unilateral contact problems involving cracks and punches. Both the solvability and numerical approximation via a boundary element method were considered.

Undergraduate Research: Department of Chemistry, CSULA, Fall 1989 - Summer 1992
(Advisor: Prof. Joseph Casanova) Computed the geometric and electronic properties of molecules in vacuum and solution using standard programs as well as developing code.

Undergraduate Internship: Department of Chemistry, University of California, Berkeley, Summer 1991
(Advisor: Dr. William Lester) Investigated the dependence on basis functions of the solution to the particle on a ring problem given by variational Monte-Carlo methods.

Teaching Experience:

California State University, Los Angeles Department of Mathematics Fall 2001 - Present
Associate Professor
Courses taught:
Algebra and Trigonometry Calculus series

Linear Algebra	Statistics
Calculus of Variations	Differential Equations
Optimization Theory	Real and Complex Analysis
Applied Functional Analysis	Numerical Analysis

University of California, Los Angeles Department of Mathematics Fall 1997-Spring 2001
Assistant Adjunct Professor for Program in Computing

Courses taught:

Introductory through Advance C++ Programming Language

Introductory Java Programming Language

Graduate Seminar on Variational Methods for Partial Differential Equations

Graduate Seminar in Linear Elasticity

Graduate Seminar in Nonlinear Functional Analysis with Applications to Partial
Differential Equations

University of California, Los Angeles Department of Mathematics Fall 1996 - Summer
1997 Postdoctoral Position

Publications

Cooper, R. A Note on the Regularity of the Solutions to Two Variational Inequalities
Involving a Pseudodifferential Operator *International Journal of Mathematics
and Mathematical Sciences* Volume 2007 ID 95738 (2007)

Cooper, R. Two Variational Inequality Problems for the Wave Equation in an Half-Space
Journal of Mathematical Analysis and Application p.p. 434-460 (232) (1999)

Casanova, J., Cooper, R., Bahe, E., Servis, K. The Neighboring Sulfonium Group in Ester
Hydrolysis III *Croatica Chemica Acta* p.p. 1455-1471 (69) (1996).

Cooper, R., Casanova, J. Two-Dimensional Atomic and Molecular Orbital Displays
Using Mathematica *Journal of Chemical Education* p.p. 487-89 (68) (1991).

Presentations

“Sobolev Space Interior Regularity Results for a Variational Inequality Involving an
Elliptic Pseudodifferential Operator”, National American Mathematical Society Meeting
January 13, 2006

“Hyperbolic Variational Inequalities”, CSU Sacramento November 8, 2002

“Applications of Variational Inequalities”, Princeton University June 21, 2002

“National Curve Bank Project/MultiMedia Minor”, CMC-South Mini-Conference, Mt.
San Antonio College October 4, 2003

Fellowships:

Danforth-Compton Doctoral Fellowship, UCLA, Fall 1992 - Spring 1997

Awarded an NSF Doctoral Fellowship Fall 1992

Minority Access to Research Careers Undergraduate Fellowship, CSULA, Fall 1989 -
Spring 1992

Societies

American Mathematical Society (AMS)