

CURRICULUM VITAE

Hongqiu Chen

Citizen of the People's Republic of China
Permanent Resident of USA

Current Address

Department of Mathematical Sciences
The University of Memphis
Memphis, TN, 38152
Tel.: 901-678-3141, Fax (901) 678-2480
Email: hchen1@memphis.edu

Education

B.S. in applied mathematics, Chengdu University of Sciences and Technology, P.R. China (1983)
M.A. in mathematics, Institute of Systems Science, Academia Sinica, Beijing, P.R. China (1988)
Ph.D. in mathematics, The University of Texas at Austin, USA (1998)

Academic Positions

Instructor: Department of Applied Mathematics, Chengdu University of Sciences and Technology, P.R. China (1983-1985)
Research Scientist: Institute of Systems Science, Academia Sinica, Beijing, P.R. China (1988-1990)
Visiting Assistant Professor: Ph. D. Program in Mathematics, The Graduate School and University Center, City University of New York, New York, USA (1998-2000)
Assistant Professor: The Department of Mathematical Sciences, The University of Memphis, Memphis, Tennessee, USA (2000-)
National Science Foundation Supported Research Assistant Professor: Department of Mathematics, Statistics & Computer Science, The University of Illinois at Chicago, Chicago, Illinois, USA (2004-2005)

Longer-Term Visiting Appointments

Centre de Mathématiques et leurs Applications, Ecole Normale Supérieure de Cachan, Paris, France, May, 1995
Université du Québec, l'Institut des Sciences de la Mer, Rimouski (QC) Canada, May, 1999

The University of Illinois at Chicago, May- August, 2002, May-August, 2003

U.F.R. Mathématiques et Informatique, Université Bordeaux 1, Bordeaux, France, May 2003, July 2005, March 2006

Teaching History

Teaching Assistant: Department of Applied Mathematics, Chengdu University of Sciences and Technology, P.R. China (1983-1985)

First-year Calculus

Undergraduate Functional Analysis

Department of Mathematics, The Pennsylvania State University (1990-1995)

Math 110 Business Calculus I

Math 111 Business Calculus II

Math 21 Intermediate Algebra

Math 22 Intermediate Algebra

Math 26 Trigonometry

Math 250 Ordinary Differential Equations

Math 251 Ordinary and Partial Differential Equations

Department of Mathematics, The University of Texas at Austin (1995-1998)

M408C First-year Calculus

M393F Nonlinear Wave Phenomenon

M393C Nonlinear Partial Differential Equations

M393D Applied Mathematics I

Ph. D. Program in Mathematics, The Graduate School and University Center, City University of New York (1998-2000)

Math 352 Advanced Calculus II at Hunter College of CUNY

Math 160 Matrix Algebra at Hunter College of CUNY

The Department of Mathematical Sciences, The University of Memphis (2000-)

Math 1830 Elementary Calculus

Math 1182 Foundations of Mathematics

Math 4350 Introduction to Real Analysis I

Math 4351 Introduction to Real Analysis II

Math 2000 Experiences in Mathematics

Math 3120 Ordinary Differential Equations

Math 7302 Nonlinear Wave Phenomena

Math 7350 Real Variables I

Math 1710 College Algebra

Math 2701 Discrete Mathematics

Math 4391/6391 Partial Differential Equations

Math 1720 Trigonometry

University of Memphis Committees

Mathematics Department Undergraduate Committee, 2000-2004

Mathematics Department Graduate Committee, 2000-2002

Mathematics Department Library Committee, 2000-2002

Mathematics Department Head Search Committee, 2002

Mathematics Department Postdoctoral Search Committee, 2002

Mathematics Department Recruiting Committee, 2005-

Mathematics Department Service Course Committee, 2005-

Member of Professional Society

Member of American Mathematical Society

Selected Invited Research Lectures

One-hour Plenary Lecture

Nonlinear wave phenomena and their applications, *International Conference on Modeling and Simulation of Complex Systems*, Sichuan University, Chengdu, China, June 2002.

One-hour Key-note Lecture

Solitary-wave solutions of systems of nonlinear wave equations, *the 51st Midwest Partial Differential Equations Seminar Conference*, University of Illinois at Chicago, April, 2003

Forth-five minutes Principal Lecture

Stability of periodic traveling wave solutions, *Nonlinear Dispersive Wave Phenomena, Current Trends in Mathematics: Algebra, Geometry, Differential Equations, Numerical Analysis, Applications to Biology*, Anogeia, Greece, July, 2005

Invited Conference Lectures

Existence of solitary-wave solutions of Benjamin-type equations and the decay properties of their outskirts, *Special Session on Nonlinear Waves, Second World Congress of Nonlinear Analysis*, Athens, Greece, July, 1996.

Internal solitary waves in the presence of surface tension, *American Math. Soc. Meeting, Special Session on PDE*, Memphis, March, 1997.

Decay of solitary waves, *Modern Analysis and Partial Differential Equations Session, New York Journal of Mathematics Conference*, Albany, New York, June 1997.

- Comparison of model equations for small-amplitude long waves, *Nonlinear Dispersive Waves: Theory and Applications, Euroconference Series*, Crete, Greece, July, 1997.
- Solitary waves in stratified fluids, *Special Session on Theoretical, Numerical and Experimental Aspects of Nonlinear, Dispersive Wave Propagation, the Fourth International Conference on Mathematical and Numerical Aspect of Wave Propagation*, Colorado School of Mines, Golden, Colorado, June, 1998.
- How does the non-analyticity of the dispersion affect the properties of solitary Waves? *AMS-IMS-SIAM Summer Research Conference*, Mount Holyoke, Massachusetts, July, 1998.
- Solitary-wave solutions of systems of equations, *954th AMS Meeting*, The University of Louisiana at Lafayette, Lafayette, Louisiana, April, 2000.
- Uniqueness of solitary waves, *Special Session on Nonlinear Waves, The Fifth International Conference on Mathematical and Numerical Aspects of Wave Propagation (WAVES 2000)*, Santiago de Compostela, Spain, July, 2000.
- Stability of solitary-wave solutions of non-linear dispersive systems, *Special Session on Nonlinear Dispersive Wave, The Third, World Congress of Nonlinear Analysis*, Catania, Sicily, Italy, July, 2000.
- Well-posedness of generalized BBM-equation with non-smooth data, *The Second IMACS International Conference on "Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory"*, University of Georgia, Athens, Georgia, March, 2001.
- How does the balance between dispersion and nonlinearity affect well-posedness for generalized BBM-type equations when the initial data is not smooth, *AMS-IMS-SIAM Summer Research Conference*, Mount Holyoke, Massachusetts, June, 2001.
- Well-posedness of generalized BBM-type equations with periodic initial disturbances, *AMS Regional Meetings on Evolution Equations*, University of Alabama at Birmingham, April, 2002
- Periodic travelling-waves for nonlinear, dispersive equations, *Special Session on Computational Methods in Analysis, AMS Southeastern Section Meeting*, Orlando, Florida, November, 2002
- A new method to discuss existence of solitary waves for nonlinear, dispersive equations, *Special Session on Nonlinear Waves, AMS Southeastern Section Meeting*, Orlando, Florida, November, 2002
- More on solitary-wave solutions for non-linear dispersive wave equations, *Third IMACS International Conference on "Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory"*, University of Georgia, Athens, Georgia, April, 2003.
- Initial and Two-point-value boundary problem for BBM-equations, *AMS Eastern Section Meeting # 997, Special Session on Theory of Initial-and Boundary-Value Problems for Some Nonlinear Partial Differential Equations*, Lawrenceville, New Jersey, April, 2004

Periodic travelling waves of nonlinear dispersive wave equations, *The 5th international conference on Dynamical and Differential Equations, Special Session on Nonlinear Dispersive Waves*, California State Polytechnic University, Pomona, California, June, 2004.

Travelling wave solutions of nonlinear dispersive wave equations, *AMS Sectional Meeting # 999, Special Session on Nonlinear Partial Differential Equations and Applications*, Nashville, October, 2004.

Comparison of quarter-plane and two-point boundary value problems: the BBM-equation, *AMS Sectional Meeting #1001, Special Session on Nonlinear Waves*, Evanston, IL, October, 2004.

Periodic traveling waves of nonlinear dispersive wave equations, *The 4th IMACS International Conference on "Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory"*, *Special Session on Modeling and Analysis*, Athens, Georgia, April, 2005

Traveling waves with small propagation velocity of Boussinesq-type system of equations, *The 4th IMACS International Conference on "Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory"*, *Special Session on Solitons on Finite Manifolds*, Athens, Georgia, April, 2005

Spatially periodic problems in nonlinear dispersive wave theory, *AIMS' Sixth International Conference on Dynamical Systems, Differential Equations and Applications, Special Nonlinear Dispersive Waves*, Poitiers, France, June, 2006.

Invited Colloquia Lectures

Nonlinear waves and applications, the Oklahoma State University, Stillwater, Oklahoma, January, 2000.

Sand beach protection and nourishment, the University of Hawaii, Honolulu, Hawaii, February, 2000.

Nonlinear waves and applications, the University of Memphis, Memphis, Tennessee, March, 2000.

Solitary waves and applications, the Michigan State University, March, 2001

Solitary waves: mathematical theory, the University of Texas Pan American, Edinburg, Texas, September, 2005

Invited Seminar Lectures

Solitary waves in stratified flows and other fluid systems, *Seminar in the Texas Institute for Computational and Applied Mathematics*, the University of Texas at Austin, October, 1997.

History and discovery of solitary waves, lecture to the graduate students at the University of Texas at Austin, October, 1997.

Nonlinear wave phenomena: solitary waves, a series of lectures given at the Graduate School and University Center of CUNY, New York, October-November, 1998.

Two mathematical methods in studying solitary-wave solutions, the Chinese University of Hong Kong, Hong Kong, China, June, 2002.

Solitary-wave solutions of nonlinear dispersive equations, Institute of Applied Physics and Computational Mathematics, Chinese Academy of Sciences, Beijing, China, July, 2002

Degree theory of positive operators and solitary waves, Université de Bordeaux 1, Bordeaux, France, May, 2003.

Periodic travelling wave solutions of systems of Boussinesq-type nonlinear, dispersive wave equations, University of Campinas, Brazil, June, 2004

Existence of solitary wave solutions for nonlinear dispersive wave equations, Providence University, Taiwan, March, 2005

Modeling comparison of BBM-equation with two different boundary conditions, National Cheng-Kung University, Taiwan, March, 2005

Comparison of Quarter-Plane and Two-Point Boundary Value Problems: The BBM-equation, Academia Sinica, Taiwan, March, 2005

Conference Organizing Committees

Differential Equations Weekend, University of Memphis, September, 2002

International Conference on Modeling and Simulation of Complex Systems, Sichuan University, Chengdu, China, June, 2002.

Differential Equations Weekend, University of Memphis, Fall, 2005

Awards and Honors

Sloan Dissertation Fellowship (1997-1998)

New Faculty Research Initiative Award, the University of Memphis, (2001-2002)

NSF-AWM Travel Grant to California State Polytechnic University to give a lecture at *the 5th international conference on Dynamical and Differential Equations, Special Session on Nonlinear Dispersive Waves*, June, 2004

Most Highly Downloaded Article of the Year (152 times) of the journal *Nonlinearity* (2004).

Invited Member to give a summer course on Nonlinear Dispersive Wave Equations by London Mathematical Society and University of Reading, UK July, 2005

Professor Invité, Université de Bordeaux 1, funded by CNRS (French National Science Foundation), July 2005, March, 2006

Collaboration on Coastal Engineering Project

Sand Beach Nourishment (with B. Boczar-Karakiewicz and her team at Université du Québec)

Grants

National Science Foundation: “Modeling Waves and Sediment Transport in Coastal Zones” (2001-2005)

Conference Participation and other Professional Activities

Annual AMS-MAA Meeting, Orlando, January, 1996 (Participated in the Special Session on Mathematics & Education Reform)

International Dynamical Systems Conference, Springfield, Missouri, May, 1996

Regional American Math. Soc. Meeting, Columbia, Missouri, November, 1996

Annual AMS-MAA Meeting, San Diego, January, 1997 (Participated in the Special Sessions on Mathematics & Education Reform and on Nonlinear Waves)

Conference on Nonlinear Partial Differential Equations, Celebration of the 10th Anniversary of the Institute for Computational Mathematics, Bloomington, Indiana, June, 1997

Discovery Learning Seminar, University of Texas at Austin (1996-1998)

Helped with Karen Uhlenbeck’s Saturday Morning Mathematics Seminar for High School Students in Austin, Texas (1997)

Helped with the Summer Honors Days for outstanding Texas high-school juniors, University of Texas at Austin, July, 1997

Regional American Math. Soc. Meeting, Kansas State University, Manhattan, Kansas, March, 1998

Symposium on Three-Dimensional Aspects of Air-Sea Interaction, Nice, France, May, 1998

Second Annual Mathematics Meeting to celebrate the 35th Anniversary of the Atiyah-Bott Theorem, Woods Hole, Massachusetts, October, 1999

Annual AMS-MAA Meeting, Washington DC, January, 2000 (Participated in the Special Session on Mathematics & Education Reform and the Special Session on Nonlinear Dispersive Waves)

Annual AMS-MAA Meeting, New Orleans, January, 2001 (Participated in the Special Session on Mathematics & Education Reform)

Annual AMS-MAA Meeting, San Diego, January, 2002 (Participated in the Special Session on Mathematics & Education Reform and the Special Session on Nonlinear Differential Equations)

Nonlinear Differential Equations, Mechanics and Bifurcation, Duke University, Durham, North Carolina, May, 2002

Annual AMS-MAA Meeting, Phoenix, Arizona, January, 2004 (Participated in the Special Session on Mathematics & Education Reform)

Annual AMS-MAA Meeting, Atlanta, Georgia, January, 2005 (Participated in the Special Session on Mathematics & Education Reform)

International Conference in Harmonic Analysis and PDE in honor of Carlos Kenig

Workshop

Problems of Pressure and Air Flow Rate over Airplane Wings, (With a Group of Graduate Students, an Engineer from the Boeing Company, and a Professor at North Carolina State University) Industrial Mathematics Modeling Workshop for Graduate Students, Raleigh, North Carolina, July–August, 1997