

Nguyen Hoang

Department of Mathematics
University of West Georgia

Phone: (678)-839-5336 (Office)
Email: nhoang@westga.edu

Education

Ph.D. Mathematics, Kansas State University, 2006–2011.
Thesis: Numerical solutions to some ill-posed problems.
Advisor: Prof. Alexander G. Ramm.

Employment

Assistant Professor, Department of Mathematics, University of West Georgia, August 01, 2013 – present.
Visiting Assistant Professor, Department of Mathematics, University of Oklahoma, 2011 – 2013.

Research interests

Numerical Analysis, Dynamical Systems, Operator theory, Ordinary and Partial differential equations, Optimization, Inverse and Ill-posed problems, Image processing.

Work experience

- Department of Mathematics, University of West Georgia, August 01, 2013– present.
- Department of Mathematics, University of Oklahoma, August 15, 2011– July 31, 2013.
- Mathematics Department, Kansas State University, August 15, 2006–July 31, 2011.
- Center for high performance computing, Vietnam National University, Hanoi, January–July 2006.
- Advanced Computational Modelling Centre, The University of Queensland, Australia, August–December, 2004.

Courses taught

Precalculus, Survey of Calculus, Calculus I–IV, Linear Algebra, Numerical Analysis, Introduction to ODEs, Real Analysis, Dynamical Systems and Applications.

Publications

In preparation

On the preconditioned steepest descent method for solving ill-posed linear operator equations.

Improved Adams-Bashforth-Moulton methods (with Roger B. Sidje).

A nonlinear total variation based algorithm for image processing.

A numerical differentiation algorithm.

Submitted Articles

The global existence and stability of solutions to abstract evolution equations with delay.

Functionally-fitted Runge-Kutta-Nystrom methods (with Roger B. Sidje).

The recovery of a parabolic equation from readings at a single point (with Amin Boumenir and Vu Kim Tuan).

Book

A. G. Ramm and N. S. Hoang, *Dynamical Systems Method and Applications: Theoretical Developments and Numerical Examples*, Wiley, Hoboken, New Jersey, 2012.

Journal Articles

N. S. Hoang, *Functionally-fitted explicit pseudo two-step Runge-Kutta-Nystrom methods.*, Appl. Numer. Math., accepted.

N. S. Hoang, *On node distribution for interpolation and spectral methods.* Math. Comp., accepted.

N. S. Hoang, *Stability results of some abstract evolution equations*, Differ. Equ. Appl., 6 (2014), 417–428.

N. S. Hoang and R. B. Sidje, *On the equivalence of the continuous Adams–Bashforth method and Nordsiecks technique for changing the step size*, Applied Mathematics Letters, 26 (2013), 725–728.

N. S. Hoang and A. G. Ramm, *Some nonlinear inequalities and applications*, J. Abstr. Differ. Equ. Appl., 2 (2011), N1, 84–101.

N. S. Hoang and A. G. Ramm, *Nonlinear differential inequality*, Math. Inequal. Appl. (MIA), 14 (2011), N4, 967–976.

N. S. Hoang, *Dynamical Systems Method of gradient type for solving nonlinear equations with monotone operators*, BIT Numer. Math., 50 (2010), N4, 751–780.

N. S. Hoang, *Dynamical System Method for solving nonlinear equations with locally Hölder continuous monotone operators*, Int. J. Comput. Sci. Math., 3 (2010), N 1/2, 56–75.

N. S. Hoang and A. G. Ramm, *DSM of Newton-type for solving operator equations $F(u) = f$ with minimal smoothness assumptions on F* , Int. J. Comput. Sci. Math., 3 (2010), N 1/2, 3–55.

N. S. Hoang and A. G. Ramm, *Dynamical systems gradient method for solving ill-conditioned linear algebraic systems*, Acta Appl. Math., 111 (2010), N2, 189–204.

N. S. Hoang and A. G. Ramm, *Dynamical Systems Method (DSM) for solving equations with monotone operators without smoothness assumptions on $F'(u)$* , J. Math. Anal. Appl., 367 (2010), N2, 508–515.

N. S. Hoang and A. G. Ramm, *Existence of solution to an evolution equation and a justification of the DSM for equations with monotone operators*, Commun. Math. Sci., 7 (2009), N4, 1073–1079.

N. S. Hoang and A. G. Ramm, *An inverse problem for a heat equation with piecewise-constant thermal conductivity*, J. Math. Phys., 50 (2009), N6, 063512.

N. S. Hoang and A. G. Ramm, *The Dynamical Systems Method for solving nonlinear equations with monotone operators*, Asian-Eur. J. Math., 3 (2010), N1, 57–105.

N. S. Hoang and A. G. Ramm, *Symmetry problems 2*, Annal. Polon. Math., 96 (2009), N1, 61–64.

N. S. Hoang and A. G. Ramm, *A new version of the Dynamical systems method (DSM) for solving nonlinear equations with monotone operators*, Diff. Eq. Appl., 1 (2009), N1, 1–25.

N. S. Hoang and A. G. Ramm, *Dynamical systems Gradient method for solving nonlinear equations with monotone operators*, Acta Appl. Math., 106 (2009), 473–499.

N. S. Hoang and A. G. Ramm, *A nonlinear inequality and applications*, Nonlinear Anal., 71 (2009), 2744–2752.

N. S. Hoang and A. G. Ramm, *Dynamical systems method for solving nonlinear equations with monotone operators*, Math. Comp., 79 (2010), 239–258.

- N. S. Hoang and A. G. Ramm, *Dynamical systems method for solving finite-rank operator equations*, Ann. Polon. Math., 95 (2009), N1, 77–93.
- N. S. Hoang and A. G. Ramm, *A discrepancy principle for equations with monotone continuous operators*, Non-linear Anal., 70 (2009), 4307–4315.
- N. S. Hoang and A. G. Ramm, *A nonlinear inequality*, J. Math. Inequal., 2 (2008), N4, 459–464.
- N. S. Hoang and A. G. Ramm, *An iterative scheme for solving equations with monotone operators*, BIT Numer. Math., 48 (2008), N4, 725–741.
- N. S. Hoang and R. B. Sidje, *Functionally-fitted pseudo two-step Runge-Kutta methods*, Appl. Numer. Math., 59 (2009), N1, 39–55.
- N. S. Hoang and A. G. Ramm, *Solving ill-conditioned linear algebraic systems by the DSM*, Inverse Probl. Sci. Eng., 16 (2008), N5, 617–630.
- N. S. Hoang and R. B. Sidje, *On the stability of functionally-fitted Runge-Kutta methods*, BIT Numer. Math., 48 (2008), N1, 61–77.
- R. B. Sidje and N. S. Hoang, *On the stability function of functionally-fitted Runge-Kutta methods*, ANZIAM J. 48 (CTAC 2006), pp. C151-C167, 2007.
- N. S. Hoang, R. B. Sidje and N. H. Cong, *Analysis of Trigonometric implicit Runge-Kutta methods*, J. Comput. Appl. Math., 198 (2007), 187–270.
- N. S. Hoang, R. B. Sidje and N. H. Cong, *On functionally-fitted Runge-Kutta methods*, BIT Numer. Math., 46 (2006), 861–874.

Awards

- Hostinsky Outstanding Graduate Teaching Assistant Academics Award, Mathematics Department, Kansas State University, 2008.
- Doctoral Development Program Fellowship, the University of Queensland, Australia, 2004.
- Second Place Prize in the Undergraduate Student Scientific Research Competition of College of Sciences, Vietnam National University, Hanoi, Vietnam, 2002.

Conferences attended

- AMS 2014 Southeastern Sectional Meeting, Greensboro, North Carolina, Nov 08-09, 2014.
- AMS 2014 Southeastern Spring Sectional Meeting, Knoxville, Tennessee, March 21–23, 2014
- AMS 2012 Spring Central Section Meeting, University of Kansas, Lawrence, KS, March 30 – April 1, 2012.
- Third Oklahoma PDE Workshop, Oklahoma State University, Stillwater, OK, November 12–13, 2011.
- Eleventh Prairie Analysis Seminar, Kansas State University, Manhattan, KS, October 21–22, 2011.
- Tenth Prairie Analysis Seminar, University of Kansas, Lawrence, KS, October 29–30, 2010.
- Introductory Workshop on Inverse Problems and Applications, MSRI, Berkeley, CA, August 23-27, 2010.
- Summer School on Seismic Imaging, University of Washington, Seattle, WA, August 2009.
- Summer School on Inverse Problems, MSRI, Berkeley, CA, July 2009.
- Ninth Prairie Analysis Seminar, Kansas State University, Manhattan, KS, October 2–3, 2009.
- Climate Change Summer School, MSRI, Berkeley, CA, July 2008.
- Seventh Prairie Analysis Seminar, Kansas State University, Manhattan, KS, November 2–3, 2007.

Talks given

Stability results of some abstract evolution equations.

Conference “Fall Southeastern Sectional Meeting”, Greensboro, North Carolina, Nov 08-09, 2014.

The stability of solutions to some abstract differential equations.

Colloquium, Department of Mathematics, University of Columbus, October 22, 2014.

On node distribution for interpolation and spectral methods

Conference “Southeastern Spring Sectional Meeting”, Knoxville, Tennessee, March 21–23, 2014.

On image restoration methods.

Colloquium, Department of Mathematics, University of Alabama, September 27, 2012.

An iterative scheme for solving equations with locally σ -inverse monotone operators.

Conference “Eleventh Prairie Analysis Seminar”, Kansas State University, October 21–22, 2011.

Dynamical Systems Method for solving operator equations.

Analysis seminar, Department of Mathematics, University of Oklahoma, October 3,10,17, 2011.

Dynamical Systems Method for solving nonlinear equations with monotone operators.

Conference “Tenth Prairie Analysis Seminar”, The University of Kansas, October 29–30, 2010.

Dynamical Systems Method for solving linear operator equations.

Conference “Ninth Prairie Analysis Seminar”, Kansas State University, October 2–3, 2009.

An iterative scheme for solving equations with monotone operators.

Analysis seminar, Mathematics Department, Kansas State University, December 10, 2008.

A discrepancy principle for solving equations with monotone operators.

Analysis seminar, Mathematics Department, Kansas State University, December 03, 2008.

Dynamical systems method for solving finite-rank operator equations.

Analysis seminar, Mathematics Department, Kansas State University, April 16, 2008.

Professional services

Referee for: Int. J. Math. Math. Sci.; Inverse Probl. Sci. Eng.; J. Indian Math. Soc.;
Optimization; J. Inverse Ill-Posed Probl.; Math Method. Oper. Res.

Member: AMS

Reviewer Mathematical Reviews;

Computer languages and software

C, C++, Fortran, Python, Matlab, Latex, Maple, Linux.