Nguyen Hoang

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Education

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

Research interests

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

Work experience

- Associate Professor, Department of Mathematics, University of West Georgia, August 01, 2017 – present.

- Assistant Professor, Department of Mathematics, University of West Georgia, August 01, 2013– July 31, 2017.

- Visiting Assistant Professor, Department of Mathematics, University of Oklahoma, August 15, 2011– July 31, 2013.

- Graduate Teaching Assistant, Mathematics Department, Kansas State University, August 15, 2006–July 31, 2011.

- Researcher, Center for high performance computing, Vietnam National University, Hanoi, January–July 2006.

- Research Assistant, Advanced Computational Modelling Centre, The University of Queensland, Australia, August-December, 2004.

- Lecturer, Mathematics-Mechanics-Informatics Department, Vietnam National University, Hanoi, 2002–2006.

Courses taught

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

Publications

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

1. N. S. Hoang, Stability of solutions to abstract evolution equations in Banach spaces under nonclassical assumptions, Differ. Equ. Appl. 14 (2022), no. 4, 553–578.

2. N. S. Hoang, Collocation Runge-Kutta-Nyström methods for solving second-order initial value problems, Int. J. Comput. Math. 98 (2021), no. 12, 2423–2444.

3. N. S. Hoang, A. G. Ramm, Stability of solutions to some abstract evolution equations with delay, Contributions to Math., 3, (2021), 1–10.

4. A. G. Ramm, N. S. Hoang, Inequalities for the size of a body derived from its scattering amplitude, J. Inequal. Spec. Funct. 12 (2021), no. 2, 12–15.

5. N. S. Hoang, On the convergence of series with recursively defined terms, J. Class. Anal. 13 (2018), no. 2, 141–149.

6. A. Boumenir, V. K. Tuan, N. S. Hoang, The recovery of a parabolic equation from measurements at a single point, Evol. Equ. Control Theory 7 (2018), no. 2, 197–216.

7. S. B. Damelin and N. S. Hoang, On Surface Completion and Image Inpainting by Biharmonic Functions: Numerical Aspects, Int. J. Math. Math. Sci., vol. 2018, Article ID 3950312.

8. A. Boumenir, V. K. Tuan, N. S. Hoang, The recovery of a parabolic equation from measurements at a single point, Evolution Equations & Control Theory, 2018, 7 (2), 197–216. DOI: 10.3934/eect.2018010

9. V. K. Tuan and N. S. Hoang, *An inverse problem for a multidimensional fractional diffusion equation*, Analysis, 36 (2016), N2, 107–122.

10. N. S. Hoang and R. B. Sidje, *Functionally-fitted Runge-Kutta-Nystrom methods*, BIT Numer. Math., 56 (2016), N1, 129–150. DOI: 10.1007/s10543-015-0561-1.

11. N. S. Hoang, *A limit comparison test for general series*, Amer. Math. Monthly, 122 (2015), N9, 893–896.

12. N. S. Hoang, *Functionally-fitted explicit pseudo two-step Runge-Kutta-Nystrom methods*, Appl. Numer. Math., 92 (2015), 111–131.

13. N. S. Hoang, *On node distribution for interpolation and spectral methods,* Math. Comp., 85 (2016), N298, 667–692.

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

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

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

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

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

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

24. 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.

25. 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.

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

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

28. 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.

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

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

31. N. S. Hoang and A. G. Ramm, *Dynamical systems method for solving linear finite-rank operator equations*, Ann. Polon. Math., 95 (2009), N1, 77–93.

32. N. S. Hoang and A. G. Ramm, *A discrepancy principle for equations with monotone continuous operators*, Nonlinear Anal., 70 (2009), 4307–4315.

33. N. S. Hoang and A. G. Ramm, *A nonlinear inequality*, J. Math. Inequal., 2 (2008), N4, 459–464.

34. N. S. Hoang and A. G. Ramm, *An iterative scheme for solving equations with monotone operators*, BIT Numer. Math., 48 (2008), N4, 725–741.

35. N. S. Hoang and R. B. Sidje, *Functionally-fitted pseudo two-step Runge-Kutta methods*, Appl. Numer. Math., 59 (2009), N1, 39–55.

36. N. S. Hoang, *Notes on an inequality*, J. Inequal. Pure & Appl. Math., 9 (2) (2008), Art. 42.

37. N. S. Hoang and A. G. Ramm, *On stable numerical differentiation*, Australian J. Math. Anal. Appl., 5 (2008), N1, Article 5, pp. 1–7.

38. 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.

39. N. S. Hoang and R. B. Sidje, *On the stability of functionally-fitted Runge-Kutta methods*, BIT Numer. Math., 48 (2008), N1, 61–77.

40. 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.

41. 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.

42. 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 and workshops attended

SIAM-SEAS 2015, University of Alabama at Birmingham, Alabama, Mar 20-22, 2015.

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, Mar 30 – Apr 1, 2012.

Third Oklahoma PDE Workshop, Oklahoma State University, Stillwater, OK, Nov 12–13, 2011.

Introductory Workshop on Inverse Problems and Applications, MSRI, Berkeley, CA, Aug 23-27, 2010.

Summer School on Seismic Imaging, University of Washington, Seattle, WA, Aug 2009.

Summer School on Inverse Problems, MSRI, Berkeley, CA, Jul 2009.

Climate Change Summer School, MSRI, Berkeley, CA, Jul 2008.

Seventh Prairie Analysis Seminar, Kansas State University, Manhattan, KS, Nov 2–3, 2007.

Invited talks

- Generalized explicit pseudo two-step Runge-Kutta-Nyström methods for solving second-order initial value problems, Applied Math Seminar, Department of Mathematics and Statistics, Mississippi State University, Starkville, MS, Oct 05, 2023.

- *On node selection for pseudo-spectral collocation methods.*
  Applied Math Seminar, Department of Mathematics, University of Alabama, Tuscaloosa, AL, Apr 03, 2015.

- *The stability of solutions to some abstract differential equations.*
  Colloquium, Department of Mathematics, University of Columbus, Columbus, GA, Oct 22, 2014.

- *On image restoration methods.*
  Colloquium, Department of Mathematics, University of Alabama, Tuscaloosa, AL, Sep 27, 2012.

Conference talks

- A nonlinear filter for denoising and its applications.
  Conference "Vietnam - USA, Joint Mathematical Meeting", QuyNhon, Vietnam, June 9-13, 2019.

- *An inverse problem for a multidimensional fractional diffusion equation.*
  Conference "The 40th SIAM Southeastern Atlantic Section Conference", Athen, Georgia, March 12-13, 2016.

- *The recovery of a parabolic equation from measurements at a single point.*
  Conference "The 35th Southeastern Atlantic Regional Conference on Differential Equations", Greensboro, North Carolina, Oct 10-11, 2015.

- *A fast algorithm for computing pseudo-spectral integration matrices.*
  Conference "the 39th SIAM Southeastern Atlantic Section Conference", Birmingham, Alabama, Mar 20-22, 2015.

- *Stability results of some abstract evolution equations.*
  Conference "Fall Southeastern Sectional Meeting", Greensboro, North Carolina, Nov 08-09, 2014.

- *On node distribution for interpolation and spectral methods*
  Conference "Southeastern Spring Sectional Meeting", Knoxville, Tennessee, Mar 21–23, 2014.

- *An iterative scheme for solving equations with locally σ-inverse monotone operators.*
  Conference "Eleventh Prairie Analysis Seminar", Kansas State University, Oct 21–22, 2011.

- *Dynamical Systems Method for solving nonlinear equations with monotone operators.*
  Conference "Tenth Prairie Analysis Seminar", The University of Kansas, Oct 29–30, 2010.

- *Dynamical Systems Method for solving linear operator equations.*
  Conference "Ninth Prairie Analysis Seminar", Kansas State University, Oct 2–3, 2009.

Professional services

Referee for:	Journal of the Indian Mathematical Society
	Optimization: A Journal of Mathematical Programming and Operations Research
	Journal of Inverse and Ill-posed Problems
	Mathematical Methods of Operations Research
	Journal of Computational and Applied Mathematics
	Mathematical Modelling of Natural Phenomena
	Electronic Journal of Differential Equations
	Acta Applicandae Mathematicae
Member:	AMS
Reviewer:	Mathematical Reviews

Computer languages and software

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

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