

CURRICULUM VITAE

MILENA STANISLAVOVA

Position: Associate Professor
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1. Research Interests

- **Partial Differential Equations:** Infinite-dimensional Hamiltonian Systems, Nonlinear Wave Equations, Stability of Traveling Waves
- **Dynamical Systems:** Invariant Manifolds, Hamiltonian Systems, Control
- **Analysis:** Semigroups of Linear Operators, Spectral Mapping Theorems

2. Education

- 2000, Ph.D., Department of Mathematics, University of Missouri, Columbia.
- 1993, M.Sc. in Mathematics, Sofia University, Sofia, Bulgaria.

3. Professional Experience

- 2007-date, Associate Professor, Department of Mathematics, KU.
- 2002-2007, Assistant Professor, Department of Mathematics, KU.
- 2000-2002, Visiting Assistant Professor, Department of Mathematics and Statistics, University of Massachusetts-Amherst.
- 1997-2000, Teaching Assistant, Department of Mathematics, University of Missouri.
- 1996-1997, Research Assistant, Department of Mathematics, University of Missouri.
- 1994-1996, Lecturer, Department of Mathematics, Sofia University.
- 1994-1995, Researcher, Mathematics Institute, Bulgarian Academy of Sci.

4. Awards and Grants

- September 2008-August 2012, NSF DMS-0807894 **Long-Time Behavior and Stability of Infinite-Dimensional Dynamical Systems** (\$141,199)
- August 2005-July 2008, NSF DMS-0508184 **Stability and Long-Time Behavior of Hamiltonian Partial Differential Equations** (\$116,181)
- May 2004- June 2005, NSF First Award EPS-0236913 **Analytical Studies of Regularity and Stability of Hamiltonian PDE's** (\$72,750)
- Fall 2009, Faculty seminar grant from Center for Teaching Excellence

- Spring 2005, Teaching Grant from the Center for Teaching Excellence
- 2003, KUCR Grant NFGRF-2301720 **Infinite-Dimensional Hamiltonian Systems and Stability of Special Solutions with Applications in Non-linear Optics** (\$7,995)
- 2003, Support from the Institute of Mathematics and its Applications, Minneapolis to participate in the New Directions Short Course (invitation only)
- 2003, Center for Teaching Excellence Grant for the Best Practices Institute, University of Kansas
- 2002, Association for Women in Mathematics Travel Grant
- 2001, 2001 Faculty Research Travel Grant (\$1000), University of Massachusetts.
- 1996-2000 Doctoral Fellowship, University of Missouri - Columbia.
- 1994-1996, Research grant of the Bulgarian Ministry of Science and Education - Mathematical Physics.
- 1988-1993, State scholarship for excellence in academic work, Sofia University.

5. Publications

- (1) M. Stanislavova, A. Stefanov, *Linear stability analysis for standing waves of second order in time PDEs*, submitted.
- (2) S. Hakkaev, M. Stanislavova, A. Stefanov, *Linear stability analysis for periodic traveling waves of the Boussinesq equation and the KGZ system*, submitted.
- (3) A. Demirkaya, M. Stanislavova, *Numerical results on existence and stability of standing and traveling waves for the fourth order beam equation*, submitted.
- (4) M. Stanislavova, A. Stefanov, *Linear stability analysis for traveling waves of second order in time PDEs*, submitted.
- (5) S. Hakkaev, M. Stanislavova, A. Stefanov, *Orbital stability for periodic standing waves of the Klein-Gordon-Zakharov system and the beam equation*, to appear *ZAMP-Zeitschrift fuer Angewandte Mathematik und Physik*
- (6) S. Hakkaev, M. Stanislavova, A. Stefanov, *Transverse instability for periodic waves of KP-I and Schrödinger equations*, to appear *Indiana Univ. Math. J.*
- (7) A. Demirkaya, M. Stanislavova, *Conditional stability theorem for the one dimensional Klein-Gordon equation*, *J. Math. Phys.*, **52**, 2011.
- (8) M. Stanislavova, A. Stefanov, *Asymptotic estimates and stability analysis of Kuramoto-Sivashinsky type models*, *Journal of Evolution Equations (JEE)*, **11**(2011), 605-635.
- (9) A. Demirkaya, M. Stanislavova, *Long Time Behavior for Radially Symmetric Solutions of the Kuramoto-Sivashinsky Equation*, *Dynamics of PDEs*, v.7, **2** (2010), 161-175
- (10) M. Stanislavova, A. Stefanov, *Effective estimates of the higher Sobolev norms for the Kuramoto-Sivashinsky equation* *Discrete and continuous dynamical systems* (2009), 729–738.
- (11) M. Stanislavova, A. Stefanov, *On precise center stable manifold theorems for certain reaction-diffusion and Klein-Gordon equations* *Physica D: Nonlinear Phenomena* **238**(2009) 2298-2307.

- (12) M. Stanislavova, *Diffraction Managed Solitons with Zero-mean Diffraction*, *Journal of Dynamics and Differential Equations*, **19** (2007), no.2, 295-307.
- (13) M. Stanislavova, A. Stefanov, *Attractors for the viscous Camassa-Holm equation*, *Disc. Cont. Dyn. Syst.- A* **18** (2007), 159–186.
- (14) M. Stanislavova, *On the Global Attractor for the Damped BBM equation*, *Discrete and Continuous Dynamical Systems* Suppl. Volume (2005), 824–832.
- (15) M. Stanislavova, A. Stefanov, B. Wang *Asymptotic Smoothing and Attractors for the Generalized Benjamin-Bona-Mahony Equation on R^3* , *J.Diff. Eq.* **219** (2005), no. 2, 451–483.
- (16) M. Stanislavova, *Regularity of ground state solutions of DMNLS*, *J.Diff. Eq.*, 210, 1 (2005) 87-105.
- (17) M. Stanislavova, A. Stefanov, *On global finite energy solutions of the Camassa-Holm equation*, *Journal of Fourier Analysis and Applications* **11** (2005), no. 5, 511–531.
- (18) Y. Latushkin, C.Li and M.Stanislavova, *The Spectrum of a Linearized 2D-Euler Operator*, *Studies in Applied Mathematics*, **112** (2004) 259-270.
- (19) F. Gesztesy, C.K.R.T. Jones, Y. Latushkin and M. Stanislavova, *A Spectral Mapping Theorem and Invariant Manifolds for Nonlinear Schrödinger Equations*, *Indiana Univ. Math. J.*,**49** (2000) 221–243.
- (20) M. Konstantinov, M. Stanislavova, P.Petkov *Perturbation Bounds and Characterization of the Solution of the Associated Algebraic Riccati Equation*. *Journal of Linear Algebra and Applications*, **285** (1998) 7-31.
- (21) M. Stanislavova, A. Zhivkov *On the Dynamics of the Four Dimensional Rigid Body in a Quadratic Potential Field.*, *J. Math. Phys.* **36** (1995), 5760–5788.

6. Invited Talks

- Invited talk at 38th International Conference "Applications of Mathematics in Engineering and Economics" (AMEE'12), June 8-13, 2012, Sozopol, Bulgaria.
- "Linear Stability Analysis for Periodic Traveling Waves of the Boussinesq Equation and the KGZ System", AMS sectional meeting, University of Kansas-Lawrence, March 31, 2012.
- Invited Talk, "Geometric Methods for Infinite-Dimensional Dynamical Systems" conference, Brown University, November 4-6, 2011.
- Invited Talk, AMS sectional meeting, University of Nebraska, October 2011.
- Invited talk at the special session on "Nonlinear Waves", SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2011.
- Invited talk at the Seventh IMACS international conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, The University of Georgia, Athens, April 2011.
- Invited talk at SIAM Conference on Nonlinear Waves and Coherent Structures (NW10), Philadelphia, August 16-19th, 2010
- Invited talk at 36th International Conference "Applications of Mathematics in Engineering and Economics" (AMEE'10), June 5-10, 2010, Sozopol, Bulgaria.

- Special session talk at Joint SIAM/RSME-SCM-SEMA Meeting Emerging Topics in Dynamical Systems and Partial Differential Equations DSPDEs'10 May 31st June 4th, 2010, Barcelona, Spain
- Invited talk at the conference on "Harmonic Analysis and PDEs" , University of Nebraska-Lincoln, April 17-18, 2010.
- Invited talk at the First Oklahoma PDE workshop, Oklahoma State University, November 21-22, 2009
- Invited participant - Banff International Research Station for Mathematical Innovation and Discovery (BIRS) workshop: Analysis of nonlinear wave equations and applications in engineering, Banff, Alberta, Canada, August 2009.
- *On precise center stable manifold theorems for reaction diffusion equations* Sixth IMACS international conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory, The University of Georgia, Athens, March 2009.
- *On the Kuramoto-Sivashinsky equation in R^1 and R^2 : effective estimates of the high-frequency tails*, special session on Long time behavior for Hamiltonian and dissipative systems, Seventh AIMS Conference, University of Texas, Arlington, May 2008.
- *Applications of Discrete and Continuous Nonlinear Schrödinger Equations*, Pioneers of Bulgarian Mathematics, International Conference, Sofia, Bulgaria, Section on Dynamical Systems, July 2006.
- *Attractors for evolution equations-a Fourier-Analytic Approach*, Dynamical Systems Weekend, Columbia, MO, May 2006.
- *Recent Developments in Applications of Discrete and Continuous Nonlinear Schrödinger Equations in Nonlinear Optics*, Kansas Center for Advanced Scientific Computing, KU, April 2006.
- *Attractors for the viscous Camassa-Holm equation*, AMS sectional meeting, Special Session on Analysis and Geometry of Non-linear Evolution Equation, University of Notre Dame, April 2006.
- *Diffraction Managed Nonlinear Schrödinger equation, localization and ground states*. January 2005, PASI 2005, Workshop on differential equations and nonlinear analysis, Santiago, Chile, January 2005.
- *On the Global Attractor for the Damped Benjamin-Bona-Mahony Equation*, special session on Dynamical Systems and Applications, Fifth AIMS Conference, California State Polytechnic University - Pomona, California, June 2004.
- *The Dispersion Managed Nonlinear Schrödinger Equation in one and two dimensions*, AMS sectional meeting, Special Session on Current Topics in Optical Communication Systems, University of North Carolina, October 2003.
- *Regularity of Ground States for DMNLS*, SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2003.
- *Time-smoothing Techniques and Applications to the Camassa-Holm Equation*, Society for Industrial and Applied Mathematics (SIAM) 50th annual meeting, Philadelphia, July 2002.

- *Stability of Evolution Equations*, February 2002, University of New Mexico, February 2002.
- *Global Well-Posedness for the Camassa-Holm Equation in the Energy Norm*, Southeastern-Atlantic Regional Conference on Differential Equations, Wake Forest University, November 2001.
- *Spectral Mapping Theorem for the 2D Euler Equation*, Georgia Institute of Technology, Dynamical Systems Seminar, April 2001.
- *Invariant Manifolds and Spectral Mapping Theorems*, AMS meeting, Special Session on Semigroups and Evolution Equations, March 2001.
- *Spectral Mapping Theorem for the 2D Euler Equation*, Southeastern-Atlantic Regional Conference on Differential Equations, Virginia Tech University, October 2000.
- *Spectral Theory for Perturbed Semigroups*, International Conference on Spectral Theory and Asymptotic Behavior of Semigroups, Blaubeuren, Germany, June 1999.
- *Dynamics of the four-dimensional rigid body in a quadratic potential field*, International Conference on Differential Equations and Mathematical Physics, University of Alabama - Birmingham, March 1999.
- *Invariant Manifolds for the Nonlinear Schrödinger Equation*, Southeastern-Atlantic Regional Conference on Differential Equations, Auburn University, October 1998.
- *Spectral Mapping Theorem for the Nonlinear Schrödinger Equation*, Brown University, November 1998.
- *Perturbation Bounds for the Associated Algebraic Riccati Equation*, International Conference on Differential Equations, Varna-Bulgaria, August 1995.

7. Talks at KU

- October 2011, Applied Mathematics Seminar, KU
- March 2011, Applied Mathematics Seminar, KU
- March 2010, Applied Mathematics Seminar, University of Kansas
- February 2009, Applied Mathematics Seminar.
- August 2006 -date, New GTA Conference, session on "Teaching in the US".
- February 2006, Presenter at the CTE Lunch and Conversation Series "For New International Faculty Members"
- January 2006, Applied Mathematics Seminar
- November 2004, CTE Lunch and Conversation Series Talk *How EDU Can Improve Student Preparation for Class*
- November 2004, AWM student chapter at KU meeting, Talk: *Leadership in Research, Administration and Teaching with Balancing Between Two Cultures*
- October 2004, Applied Mathematics Seminar
- March 2004, Applied Mathematics Seminar
- September 2003, Mathematical Physiology Seminar
- April 2003, Applied Mathematics Seminar
- December 2002, Mathematical Physiology Seminar

- November 2002, Applied Mathematics Seminar

8. Graduate students supervised

- Ayse Esen, masters project supervisor.
- Aslihan Demirkaya, Ph.D. supervisor.
- Tim Dorn, member of dissertation committee.
- Andrew Monaco, member of dissertation committee, Economics Department
- Minji Zhang, member of prelim committee
- Mohamed Badawy, member of prelim committee.
- Melinda Montgomery, directed reading in Nonlinear Dynamical Systems, member of master's committee.
- Michael Bateman, directed reading in Mathematical Physics-nonlinear equations, optics, NLS and KdV equation, solitons, member of master's committee.

9. Departmental Service

- Director of Graduate Studies, 2012-date
- Admissions Director of Graduate Studies, 2010- date.
- Chair Search Committee, 2012
- Long Range Planning committee, 2011-2012
- Member of the Executive Committee, 2009-2010.
- Member of the Outreach Committee, 2008-2010.
- Colloquium Co-chair, 2002-2007.
- Long range planning committee, 2003/2004.
- Ambassador for the Center for Teaching Excellence, 2004-2007.
- Chair of the Elementary Algebra Courses Committee, 2006-2010.
- Analysis qualifying examinations, 2002-date.
- Member of the Lower Division of the Undergraduate Committee, 2002-date.

10. Scholarly Service

- Co-organizer of a special session on PDEs, AMS sectional meeting, University of Kansas, March 2012.
- Organizer of a special session on Linear and Nonlinear Stability of coherent structures, Eight AIMS Conference, Dresden, Germany, May 2010.
- Organizer of a special session on Long time behavior for Hamiltonian and dissipative systems, Seventh AIMS Conference, University of Texas, Arlington, May 2008.
- Organizer of a Mini-symposium Stability and Regularity of Nonlinear Waves at the SIAM Meeting in Snowbird, UT May 2003 and May 2005.
- Organizer of a Mini-symposium Discrete and Continuous NLS at the SIAM Meeting in Snowbird, UT, May 2005.
- Referee for Nonlinearity, Applied mathematics Letters, Dynamics of PDE, Communications in Pure and Applied Analysis, International Journal of Mathematics and Mathematical Sciences , Journal of Mathematical Analysis and

Applications, AMS contemporary mathematics volume, Journal of Applied Mathematics and Stochastic Analysis

- Reviewer for Mathematical Reviews
- served on several NSF grant-review panels

11. University Service

- Documenting and Advancing Learning Faculty Seminar, Center for Teaching Excellence, 2012-2014
- First Year Seminar steering committee member. Steering committee members are developing model FYS and general FYS guidelines this academic year (2011-2012), and will implement their courses in the fall of 2012. Results of these pilot courses will be used to refine plans for expansion of the FYS program.
- Member of Faculty Senate, 2010-date.

12. State Service

State Director for the state of Kansas for the International Math Kangaroo competition for K-12 kids, 2007-date.