CURRICULUM VITAE

LIANCHENG WANG

Professor of Mathematics

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EDUCATION:

1. Ph. D., Applied Mathematics, Mississippi State University, 2000
2. M. S., Applied Mathematics, Jilin University, China, 1989
3. B. S., Mathematics, Jilin University, China, 1984

PROFESSIONAL EXPERIENCE:

1. Professor, August 2014-present
   Department of Mathematics and Statistics, Kennesaw State University
2. Associate Professor, August 2009-July 2014
   Department of Mathematics and Statistics, Kennesaw State University
3. Assistant Professor, August 2004-July 2009
   Department of Mathematics and Statistics, Kennesaw State University
4. Assistant Professor, August 2000-July 2004
   Department of Mathematical Sciences, Georgia Southern University
5. Graduate Teaching Assistant, January 1996-July 2000
   Department of Mathematics and Statistics, Mississippi State University
6. Lecturer/Assistant Professor, September 1984-December 1995
   Department of Mathematics, Jilin University, China

RESEARCH AND CREATIVE ACTIVITIES

Research Areas:

1. Differential equations, nonlinear dynamics of mathematical models in Epidemiology and Immunology
2. Bifurcation theory
3. Algebra and matrix theory, algorithm to solve linear systems

Publications: published, accepted and submitted research articles (refereed).

1. Liancheng Wang and Xiaoqin Wu, A Zero-Hopf Bifurcation Analysis for a Krawiec-Szydlowski Model of Business Cycles with Two Different Delays, Journal of Dynamic Systems and Applications, 23 (2014), 531-560.

2. Xiaoqin Wu and Liancheng Wang, A Hopf Bifurcation Analysis for a Kaldor-Kalecki Model of Business Cycles with Two Different Delays, Communications in Applied Analysis, 18 (2014), 195-214.

3. Xiaoqin Wu and Liancheng Wang, Zero-Hopf Singularity for Delayed Differential Equations, J. of Nonlinear Dynamics, 75 (2014), 141-155.

4. Michael Y. Li and Liancheng Wang, Backward Bifurcation in a Mathematical Model for HIV Infection in vivo with Anti-retroviral Treatment, Nonlinear Analysis: Real World Applications, 17 (2014), 147-160.

5. Xiaoqin Wu and Liancheng Wang, A Kaldor-Kalecki Model of Business Cycles with a Time Delay in Capital Stock, The IMA Journal of Applied Mathematics, 79 (2014), 571-599.

6. Chunrui Zhang, Baodong Zhang, and Liancheng Wang, Dynamic Systems and Related Algebra with Applications, Editorial, Abstract and Applied Analysis, 2013 (2013), 1-2.

7. Xiaoqin Wu and Liancheng Wang, Codimension-2 Bifurcations of Coupled BVP Oscillators with Hard Characteristics, Applied Mathematics and Computation, 219 (2013), 5303-5320.

8. Liancheng Wang, Global Dynamics Analysis of HIV Models with Treatments, International J. of Bifurcation and Chaos, 22 (2012), 1250227, DOI: 10.1142/S0218127412502276.

9. Joshua Du and Liancheng Wang, Dispersion Relations for Supersonic Multiple Virtual Jets, Discrete and Continuous Dynamical Systems-Supplement, 2011, 381-390.

10. Liancheng Wang and Xioaqin Wu, Global Mathematical Analysis of an HIV Infection Model with Full Logistic Growth and Saturation Incidence, Journal of Nonlinear Systems and Applications (JNSA), 2 (2011), no.3-4, 160-166.

11. Joshua Du, Baodong Zheng and Liancheng Wang, New Iterative Methods for Solving Linear Systems, J. of Applied Analysis and Computation, 1 (2011), no.3, 351-360.

12. Chunrui Zhang, Baodong Zheng and Liancheng Wang, Multiple Hopf Bifurcations of Three Coupled van der Pol Oscillators with Delay, Applied Mathematics and Computation, 217 (2011), 7155-7166.

13. Liancheng Wang, Global Mathematical Analysis of an HIV-1 Infection Model with Holling Type-II Incidence, Communications in Applied Analysis, 15 (2011), no. 1, 47-56.

14. Xiaoqin Wu and Liancheng Wang, Zero-Hopf Bifurcation for van der Pol's Oscillator with Delayed Feedback, J. of Computational and Applied Mathematics, 235 (2011), 2586-?602.

15. Liancheng Wang, Jiehua Zhu and Xiezhang Li, The SOR-k Method for Linear Systems With p-Cyclic Matrices, International J. of Computer Mathematics, 87 (2010), 1785-1794.

16. Xiaoqin Wu and Liancheng Wang, Hopf Bifurcation of a Class of Two Coupled Relaxation Oscillators of the van der Pol Type with Delay, Discrete and Continuous Dynamical Systems-Series B, 13 (2010), 503-516.

17. Xiaoqin Wu and Liancheng Wang, Multi-parameter Bifurcation of Kaldor-Kalecki Model of Business Cycles with Delay, Nonlinear Analysis: Real World Applications, 11 (2010), 869-887.

18. Liancheng Wang and Xioaqin Wu, Bifurcation Analysis of a Kaldor-Kalecki Model of Business Cycle with time Delay, Electronic J. of Qualitative Theory of Differential Equations, Spec. Ed. I. 27 (2009), 1-20.

19. Chunrui Zhang, Baodong Zheng and Liancheng Wang, Multiple Hopf Bifurcations of Symmetric BAM Neural Network Model With Delay, Applied Mathematics Letters, 22 (2009), 616-622.

20. Baodong Zheng and Liancheng Wang, The Spectral Radius and Infinity Norm of Matrices, J. of Mathematical Analysis and Applications, JMAA, 346 (2008), 243-250.

21. Joshua Du and Liancheng Wang, The Dispersion Relations of Kevin-Helmholtz Instability Wave of Supersonic Triple Jets, The Proceedings of Dynamic Systems and Applications, 5 (2008), 143-150.

22. Liancheng Wang and Sean Ellermeyer, HIV Infection and $CD4^+$ T Cells Dynamics, Discrete and Continuous Dynamical Systems-Series B, 6 (2006), 1417-1430.

23. Hem R. Joshi, Suzanne Lenhart, Michael Y. Li and Liancheng Wang, Optimal Control Methods Applied to Disease Models, Contemporary Mathematics, 410 (2006), 187-207.

24. Liancheng Wang and Michael Y. Li, Mathematical Analysis of Global Dynamics of a Model for HIV Infection with $CD4^+$ T cells, Math. Biosci., 200 (2006), 44-57.

25. Liancheng Wang, Michael Y. Li and Denise Kirschner, Mathematical analysis of the global dynamics of a model for HTLV-I infection and ATL progression, Math. Biosci., 179 (2002), 207-217.

26. Liancheng Wang and Michael Y. Li, Global Stability in Some SEIR Epidemic Models, The IMA Volumes in Mathematics and Its Applications, Mathematical Approaches for Emerging and Reemerging Infectious Diseases, Models, Methods, and Theory, Vol. 126, pp295-312, Springer, 2002

27. Michael Y. Li, Hal L. Smith and Liancheng Wang, Global Dynamics of an SEIR Model with Vertical Transmission , SIAM J. Appl. Math., 62 (2001), 58-69.

28. Liancheng Wang and Michael Y. Li, Diffusion-Driven Instability in Reaction-Diffusion Systems, J. Math. Anal. Appl., 254 (2001), 138-153.

29. Liancheng Wang and Michael Y. Li, Global Dynamics of SEIR Models with Vertical Transmission and Saturation Incidence, The Proceedings of Dynamic Systems and Applications, 3 (2001), 603-610.

30. Michael Y. Li, John R. Graef, Liancheng Wang and Janos Cersai, Global Dynamics of an SEIR Model with Varying Population Size. Math. Biosci.,160 (1999), 191-213.

31. Michael Y. Li and Liancheng Wang, A Stability Criterion for Matrices, J. Math. Anal., 225 (1998), 249-264.

32. John R. Graef, Michael Y. Li and Liancheng Wang, A Study on the Effects of Disease Caused Death in a Simple Epidemic Model. Discr. Cont. Dynam. Systems, Special Volume (1998), 288-300.

33. Duality for Nonsmooth Pseudolinear Multiobjective Programming (with Q. Liu and J. Dong). Math. Appl., 9 (1996), 395-398.

34. Optimality Conditions and Duality for nondominated solutions in nonsmooth multiobjective optimization(with J. Dong and Q. Liu). Math. Appl. 8 (1995), 404-408.

35. Symmetric Duality and self-duality for vector optimization problems in Banach Spaces (with J. Dong and D. Chen). Acta Math. Appl. Sinica 18 (1995), 474-480.

36. Nonsmooth Multiobjective Programming (with Q. Liu and J. Dong). J. of Systems Sci. and Math. Sci.. 7 (1994), 362-366.

37. Optimality Conditions in Nonsmooth Multiobjective Programming (with Q. Liu and J. Dong). J. of Systems Sci. and Math. Sci., 7 (1994), 250-255.

38. First and Second Order Sufficient Conditions in Nonsmooth Optimization, Vol. 1, Operation Research and Decision Making, ORSC'92, Xi'an, China

39. The Generalized Gradients of the Quasi-Lipschitz Functions and Its Simple Applications to Optimization(with J. Dong and X. Hu). Acta Math. Appl. Sinica, 15 (1992), 499-509.

40. Convex Set-Valued Mapping and Its Set-Valued Derivatives. Northeast Operation Research, 7 (1992).

41. Theorem of the Alternative and Nonsmooth Multiobjective Programming. Suppl. Of ACTA SCIENTIARUM NATURALIUM UNIVERSITATIS JILINENSIS, 1991.

42. All-Differential Functions and Their Generalized Gradients. J. of Jilin University of Technology, 4 (1991).

43. First and Second Order Optimal Conditions for a Class of Nonsmooth Programming Problems, J. Jilin University of Technology, 10 (1990).

Conference presentations and colloquium talks:

1. (Two Invited talks) The 9th International Conference on Differential Equations and Dynamical Systems, Dallas, TX, May 14-16, 2015.
2. (Invited talk) New Trends in Differential and Difference Equations, The University of Tennessee at Chattanooga, Chattanooga, TN, March 15-16, 2013.
3. (Invited talk) The 8th International Conference on Differential Equations and Dynamical Systems, University of Waterloo, Waterloo, Canada, August 1-4, 2012.
4. The 31st Southeastern Atlantic Regional Conference on Differential Equations, Georgia Southern University, Statesboro, GA, September 30-October 1, 2011.
5. (Invited talk) The 7th International Conference on Differential Equations and Dynamical Systems, University of South Florida, Tampa, Florida, December 15-18, 2010.
6. (Invited talk) The Fourth International Conference on Neural, Parallel and Scientific Computations, Morehouse College in Atlanta, Georgia, August 11-14, 2010.
7. (Invited talk) The Third International Conference on Dynamics, Vibration and Control, Zhejiang University, Hangzhou, China, May 12-14, 2010.
8. The 29th Annual Southeastern-Atlantic Regional Conference on Differential equations, Mercer University, Macon, October 16-17, 2009.
9. The 2008 AMS Southeastern Sectional Meeting, University of Alabama at Huntsville, October 24-26, 2008.
10. (Invited talk) The 5th Congress of Nonlinear Analysts, Orlando, FL, July 2-9, 2008.
11. The 2008 Joint AMS and MAA Annual Meeting, San Diego, CA, January 6-9, 2008.
12. An invited Colloquium talk in the Department of Mathematical Science at Georgia Southern University, November 19, 2007.
13. The 86th MAA Annual Southeastern Section Meeting, Georgia Southern University, Statesboro, GA, March 16-17, 2007.
14. (Invited talk) Conference on Differential and Difference Equations and Applications, Florida Institute of Technology, Melbourne, Florida, August 1-5, 2005.
15. Sixth Mississippi State - UAB Conference on Differential Equations and Computational Simulations, Mississippi State University, May 13-14, 2005.
16. (Invited talk) The 4th World Congress of Nonlinear Analysis, Orlando, Florida, June 30-July 7, 2004.
17. An invited Colloquium talk in the Department of Mathematics at University of Tennessee at Chattanooga, October 31, 2003.
18. The 23rd Southeastern-Atlantic Regional Conference on Differential Equations, Kennesaw State University, Kennesaw, GA, October 17-18, 2003.
19. (Invited talk) The 4th International Conference on Dynamic Systems and Applications, Morehouse College, Atlanta, GA, May 21-23, 2003.
20. (Invited talk) AMS and MAA Spring Southeastern Section Meetings, Georgia Institute of Technology, Atlanta, GA, March 8-10, 2002.
21. (Invited talk) Southeastern Section Meeting of the American Mathematical Society, University of Tennessee at Chattanooga, Chattanooga, October 5-6, 2001.
22. (Invited talk) International Conference on Dynamics of Continuous, Discrete and Impulsive Systems, London, Canada, July 27-31, 2001.

23. (Invited talk) The American Mathematical Society and Society of Mexican Mathematics Joint Meeting, Morelia, Mexico, May 23-26, 2001.
24. The 5th Mississippi Conference on Differential Equations and Computational Simulations. Mississippi State University, May 18-19, 2001.
25. (Invited one hour presentation) The 24th Annual Meeting of the Society for Industrial and Applied Mathematics Southeastern Atlantic Section and the 3rd SIAM-SEAS Student Conference, University of Georgia, Athens, March 24-25, 2000.
26. (Invited talk) The 3rd International Conference on Dynamic Systems and Applications, Morehouse College, Atlanta, May 26-29, 1999.
27. The 4th Mississippi Conference on Differential Equations and Computational Simulations. Mississippi State University, May 21-22, 1999.
28. SIAM Southeastern Atlantic Section Meeting, University of Tennessee, Knoxville, March 19-20, 1999.
29. The 18th Annual Southeastern Atlantic Regional Conference on Differential Equations. Auburn, October 16-17, 1998.
30. The 3rd Mississippi Conference on Differential Equations and Computational Simulations. Mississippi State University, May 16-17, 1997.

Conference attended and departmental talks:

1. SIAM Conference on Optimization, San Diego, Ca, May 19-22, 2014.
2. A Presenatation at the Analysis and Applied Math Seminar, KSU, Department of Mathematics and Statistics, Feburary 22, 2013.
3. A "Math Talks" presentation, Department of Mathematics, KSU, October 18, 2012.
4. The AMS/MAA Joint Meeting, San Fransisco, Jan. 13-16, 2010.
5. The Fifth International Conference on Dynamic Systems and Applications, Morehouse College, Atlanta, GA, May 30-June 2, 2007.
6. A "Math Talks" presentation, Department of Mathematics, KSU, November 3, 2005.
7. A "Math Talks" presentation, Department of Mathematics, KSU, October 28, 2004.
8. The 24th Annual Southeastern-Atlantic Regional Conference on Differential Equations, University of Tennessee at Chattanooga, Chattanooga, TN, October 22-23, 2004.
9. Two departmental colloquium talks, Department of Mathematical Sciences, Georgia Southern University, 2000 and 2001.

1. Referee for following professional journals:

    - SIAM Journal of Dynamical Systems.
    - SIAM Journal of Applied Mathematics.
    - Journal of Mathematical Analysis and Applications.
    - Mathematical Biosciences
    - Applied Mathematical Modeling
    - The International Journal of Mathematics and Mathematical Sciences.
    - Canadian Applied Math Quarterly
    - The Journal of Discrete and Continuous Dynamical Systems
    - Journal of Applied Mathematics

- Journal of Applied Mathematics and Computing
- Journal of Mathematical Medicine and Biology
- Electronic Journal of Differential Equations
- Acta Mathematica Applicatae Sinica (English Series)
- Communications in Applied Analysis
- Journal of Neurocomputing
- Journal of the Nigerian Mathematical Society
- Writing reviews for Zentralblatt MATH