CURRICULUM VITAE

Mao-Pei Tsui

Mailing Address

Department of Mathematics
The University of Toledo
2801 W. Bancroft St Toledo, Ohio 43606-3390
Tel:(O)(419) 530-2998 Fax: (419) 530-4720
Email:mao-pei.tsui@utoledo.edu
Homepage:http://www.math.utoledo.edu/∼mtsui

Research Interests

Differential Geometry (53), General Relativity and Gravitation (83) and Partial Differential Equations (35).

Education

- Ph. D. in Mathematics, 2001, Brandeis University
- M.S. in Applied Mathematics, Hsinchu,1989, National Chao-Tung University, Hsinchu, Taiwan.
- B.S. in Applied Mathematics, 1987, National Chao-Tung University, Hsinchu, Taiwan.

Employment

- Jan, 2008-present: Assistant Professor, Department of Mathematics, University of Toledo.
- Jan, 2007-Dec, 2007: Assistant Professor, Department of Mathematics, National Taiwan University, Taiwan.
- Aug, 2005- Dec, 2006: Assistant Professor, Department of Mathematics, University of Toledo.
- July, 2001-July, 2005: Ritt Assistant Professor, Department of Mathematics,Columbia University.
- July, 2000- July, 2001: Software Engineer, Parametric Technology Corporation .
- Summer, 1998: Graduate student mentor for Ronald E. McNair Scholar's Program, Brandeis University.

- 1993-1998: Instructor, Department of Mathematics, Brandeis University.

- 1991-1992: Lecturer, Department of Applied Mathematics, National Chao-Tung University, Hsinchu, Taiwan.

Publications

1. (With J-E Lee):The geometry and completeness of the two-phase solutions of the nonlinear Schöringer equations, Nonlinear evolution equations and dynamical systems (Kolymbari, 1989), 94–97, Res. Rep. Phys., Springer, Berlin, 1990.

2. On Some Geometric Problems from General Relativity, 2000, Brandeis Thesis.

3. (With M-T Wang) A Bernstein type result for special Lagrangian submanifolds, Math. Res. Lett. 9 (2002), no. 4, 529–535.

4. (With M-T Wang) Mean curvature flows and isotopy of maps between sphere, Comm. Pure. Appl. Math. 57 (2004), no. 8. 1110-1126.

5. (With Tian-Tsong Ng, Shih-Fu Chang, Jessie Hsu, Lexing Xie) Physics-Motivated Features for Distinguishing Photographic Images and Computer Graphics. In ACM (Association for Computing Machinery) Multimedia, Singapore, November 2005.

6. (With Tian-Tsong Ng, Shih-Fu Chang) Camera Response Function Estimation from a Single-channel Image Using Differential Invariants, ADVENT Technical Report 216-2006-2 Columbia University, March 2006

7. (With Tian-Tsong Ng, Shih-Fu Chang) Using Geometry Invariants for Camera Response Function Estimation, In IEEE Computer Society Conference on Computer Vision and Pattern Recognition, June 2007.

8. (With Tian-Tsong Ng, Shih-Fu Chang) Lessons Learned from Online Classification of Photo-Realistic Computer Graphics and Photographs, In IEEE Workshop on Signal Processing Applications for Public Security and Forensics (SAFE), April 2007.

9. (With J. Loftin) Ancient Solutions of the Affine Normal Flow, J. Differential Geom. 78 (2008), no. 1, 113–162.

10. (With J. Loftin) Limits of Solutions to a Parabolic Monge-Ampere Equation, Recent Advances in Geometric Analysis ALM11, Higher Education Press and International Press, 151-172.

11. (with Tian-Tsong Ng) Camera Response Function Signature for Digital Forensics - Part I: Theory and Data Selection,IEEE Workshop on Information Forensics and Security (WIFS), Dec. 2009.

12. (With Dominic Joyce, Yng-Ing Lee) Self-similar solutions and translating solitons for Lagrangian mean curvature flow, J. Diff. Geom. 84 (2010), 127-161.

13. (with Mu-Tao Wang) Entire solutions of minimal surface systems with bounded two-Jacobians, preprint.

14. (with Henry Wente) A Geometric Proof of the Uniqueness Theorem for Solutions to the Liouville Equation, preprint.

15. (with Yng-Ing Lee and Mu-Tao Wang) Stability of the Minimal Surface System and Convexity of Area Functional , preprint.

Invited Talk

1. Geometry and Analysis Seminar, Columbia University, Feb.2001

2. Workshop on Geometric Evolution Equations, National Center for Theoretic Center, Hsinchu, Taiwan, Jul. 2003

3. Geometry and Analysis Seminar, Columbia University, March 2001

4. AMS sectional meeting, Courant Institute, New York, Apr. 2003.

5. Geometric Analysis Seminar, Princeton University, May 2004

6. Differential Geometry and Analysis Seminar,CUNY Graduate Center , Octber 2004

7. Analysis Seminar, Cornell University, November 2004

8. Colloquium, University of Oklahoma, Feb. 2005

9. Colloquium, University of Toledo, March 2005

10. Geometric Analysis Conference , CUNY Graduate Center, March 2005

11. Geometric and Analysis Seminar, University of Toledo, September 2005

12. Student Research Seminar, University of Toledo, October 2005
13. Geometry Seminar, University of Toledo, November 2005
14. Natural Images Workshop at IMA,University of Minnesota, March 2006
15. Symplectic Topology and Differential Geometry Seminar, University of Minnesota, March 2006
16. Geometry Seminar, University of Michigan, March 2006
17. Geometry Analysis Seminar, Michigan State University, April 2006
18. Geometry Seminar, National Taiwan University, Taiwan Jan - June 2007
19. Colloquium, National Chung Hsing University, Taiwan March 2007
20. Colloquium, National Chiao-Tung University, Taiwan April 2007
21. Colloquium, National Central University, Taiwan December 2007
22. Invited speaker, the Fourth International Congress of Chinese Mathematicians ICCM-2007 at Zhejiang University, China, December 2007
23. Geometric analysis seminar, Ohio State University, October 2008
24. Geometry and Topology Seminars, University of Waterloo, Canada, May 2009
25. Conference Complex and Differential Geometry , Leibniz Universität Hannover, Germany, Sep. 2009
26. Differential Geometry Seminar, Lehigh University, Oct. 2009
27. Differential Geometry , Lehigh University, Oct. 2009
28. 2010 NCTS/TPE-TIMS Mini-Course and Workshop on Geometric and Complex Analysis, National Taiwan University, July 2010
29. Geometry Seminar, National Chengkung University, July 2010

Conferences

1. Workshop on Geometric Evolution Equations, National Center for Theoretic Center, Hsinchu, Taiwan, Jul. 2001

2. First Yamabe Memorial Symposium on Geometry and Analysis, University of Minnesota , Sep. 2002.

3. Geometry of Lagrangian Submanifolds, Institute for Pure and Applied Mathematics, University of Southern California, April 14 - 18, 2003.

4. 11th Southern California Geometric Analysis Seminar,University of California at Irvine, Feb. 21- 21, 2004.

5. Geometric Flows: Theory and Computation, Institute for Pure and Applied Mathematics, University of Southern California, February 23 - 27, 2004.

6. Second Yamabe Memorial Symposium on Geometry and Analysis, University of Minnesota , Sep. 2004.

7. Conference Honoring the Retirements of F. Reese Harvey and John C. Polking, Rice University , Nov. 2005

8. XIIIth Southern California Geometric Analysis Seminar, University of California at Irvine , Jan. 2006

9. Workshop: Natural Images, Institute for Mathematics and its Applications, University of Minnesota , Mar. 2006

10. Workshop: Shape Spaces, Institute for Mathematics and its Applications, University of Minnesota , Apr. 2006

11. 2007 International Conference on Geometric Analysis, June 2007, National Taiwan University, Taiwan.

12. Geometric Analysis: Present and Future, August 27-September 1, 2008, Harvard University

13. The 61st Fall 2008 Midwest PDE Seminar, Nov 7-9, Ohio State University

14. Workshop on "Connections in Geometry and Physics", Perimeter Insitute for Theoretical Physics (Canada), May 8-10, 2009.

15. International Conference of Mathematics July 6-11, 2009, Department of Mathematics, National Taiwan University, Taipei, Taiwan

16. Current Topic Workshop: Mathematical Developments Arising from Biology, November 8-10, 2009, Mathematical Biology Institute

17. The 17th Southern California Geometric Analysis Seminar, Feb 20-21, 2010, UC Irvine

Teaching experience

1. Numerical Methods and Linear Algebra (Math 2890), Spring 2008, 2009, Fall 2010, University of Toledo
2. Partial Differential Equations, Fall 2008, Spring 2008, University of Toledo
3. Math for Liberal Arts (Online Course), Spring 2007
4. Introduction to Statistics (Online Course), Spring 2007, University of Toledo
5. Differential Geometry I, Fall 2006, University of Toledo
6. Topology, Spring 2006, 2009, University of Toledo
7. Calculus III, Spring 2006, University of Toledo
8. Elementary Differential Equations, Fall 2005, Fall 2006, University of Toledo
9. Partial Differential Equation, Spring 2005, Columbia University.
10. Analysis and Optimization, Spring 2004, Columbia University.
11. Ordinary differential equations, Fall 2003, Columbia University.
12. Calculus: differential and integral calculus for freshman , 2001-present, Columbia University.
13. Calculus: differential and integral calculus for freshman , 1993-1998, Brandeis University.
14. Calculus: differential and integral calculus for freshman , 1991-1992, National Chao-Tung University, Taiwan.

Professional Service

1. Referee, Journal of Differential Geometry, Transactions of the American Mathematical Society, Pure and Applied Mathematics Quarterly and Journal of Computer Science and Technology.

2. Organizer, New Perspectives in Geometric Analysis Conference, May 9-11 2006, University of Toledo.

3. Organizer, 2007 International Conference on Geometric Analysis, June 14-18 2007, National Taiwan University, Taiwan.

4. Organizer, The Ninth Pacific Rim Geometry Conference, Dec 10–14, 2008, , National Taiwan University, Taiwan.

5. Organizer, 2010 NCTS/TPE-TIMS Mini-Course and Workshop on Geometric and Complex Analysis, National Taiwan University, Taiwan.

6. Colloquium organizer, University of Toledo, 2009-2010.

7. Undergraduate Adviser, University of Toledo, Jan. 2010-Present