

Curriculum Vitae

Xiaodong Wang
<http://www.math.msu.edu/~xwang/>

Education

- B.S. in Mathematics, Tsinghua University, China, 1993.
- M.S. in Mathematics, Peking University, China, 1996.
- Ph.D. in Mathematics, Stanford University, June 2001.
Adviser: Professor Richard Schoen.

Employment

- Associate Professor of Mathematics, Michigan State University, July 2008–present
- Assistant Professor of Mathematics, Michigan State University, Aug. 2004–June 2008
- C. L. E. Moore Instructor of Mathematics, MIT Sept. 2001–July, 2004.

Research Interests

Geometric Analysis and PDE

Grants

NSF Research Grant DMS 0905904, Sept. 2009–Aug. 2012
NSF Research Grant DMS 0505645, June 2005–May 2008
NSF Research Grant DMS 0202122, July 2002–June 2004

Publications and Preprints (available on <http://www.math.msu.edu/~xwang>)

1. *Some recent results in CR geometry*, preprint, submitted to the Proceedings of the 3rd Conference of Tsinghua Sanya Math. Forum
2. *On a remarkable formula of Jerison and Lee in CR geometry*, arXiv: 1308.5182, submitted.
3. *The isoperimetric constant of symmetric spaces of noncompact type*, arXiv: 1308.3404, submitted.
4. *A new characterization of the CR sphere and the sharp eigenvalue estimate for the Kohn Laplacian* (joint with Song-Ying Li, Duong Ngoc Son), arXiv: 1308.3403, submitted.
5. *An Obata type theorem in CR geometry* (joint with Song-Ying Li), arXiv:1207.4033, to appear in J. Diff. Geom.
6. *Pinching theorems for the volume entropy* (joint with François Ledrappier), preprint.

7. *On the bottom of the spectrum of Kähler-Einstein manifolds with strongly pseudoconvex boundary* (joint with Song-Ying Li), Int. Res. Math. Notices 19 (2012), 4351-4371.
8. *Local gradient estimate for p -harmonic functions on Riemannian manifolds* (joint with Lei Zhang), Comm. Anal. Geom. 19 (2011), no. 4, 759-771.
9. *Compactifications of complete Riemannian manifolds*, Surveys in Geometric Analysis and relativity (ALM 20), pp. 517-529.
10. *Extension of a theorem of Shi and Tam* (joint with Michael Eichmair and Pengzi Miao), Calculus of Variations and PDE. 43 (2012), no. 1-2, 45-56.
11. *An integral formula for the volume entropy with applications to rigidity* (joint with François Ledrappier), J. Diff. Geom. 85 (2010), 461-478.
12. *Rigidity theorems for manifolds with boundary and positive Ricci curvature* (joint with Fengbo Hang), J. Geom. Anal. 19 (2009), 628-642.
13. *Harmonic functions, entropy, and a characterization of the hyperbolic space*, Journal Geom. Anal. 18 (2008), 272-284.
14. *An integral equation in conformal geometry* (joint with Fengbo Hang and Xiaodong Yan), Annales de l'Institut Henri Poincaré (C) ANALYSE NON LINEAIRE 26 (2009), 1-21.
15. *Vanishing sectional curvature on the boundary and a conjecture of Schroeder and Strake.* (joint with Fengbo Hang), Pacific J. Math 232 (2007), 283-287.
16. *A remark on Zhong-Yang's eigenvalue estimate* (joint with Fengbo Hang), IMRN 18 (2007).
17. *Sharp integral inequalities for harmonic functions* (joint with Fengbo Hang and Xiaodong Yan), Comm. Pure Appl. Math. 61 (2008), 54-95.
18. *On the stability of Kähler-Einstein manifolds* (joint with Xianzhe Dai and Guofang Wei), Comm. Anal. Geom. 15 (2007), 669-693.
19. *On asymptotically complex hyperbolic Kähler manifolds*, Proc. AMS 135 (2007), no. 9, 2949-2960.
20. *Some rigidity and nonrigidity results on the sphere* (joint with Fengbo Hang), Comm. Analysis and Geometry 14 (2006) 91-106.
21. *A new approach to some nonlinear geometric equations in dimension two* (joint with Fengbo Hang), Cal. of Var. and PDE 26 (2006), no. 1, 119-135.
22. *On the stability of Riemannian manifolds with a parallel spinor* (joint with Xianzhe Dai and Guofang Wei), Invent. Math. 161 (2005), 151-176.

23. *Notes on Perelman's paper on the entropy formula for Ricci flow and its geometric applications*, (joint with Natasa Sesum and Gang Tian).
24. *Uniqueness of the AdS spacetime in any dimensions*, *Acta Mathematica Sinica* 21 (2005), no. 4, 917-922.
25. *On the L^2 cohomology of a convex cocompact hyperbolic manifold*, *Duke Math. J.* 115 (2002) no.2, 311-327.
26. *On the geometry of conformally compact Einstein manifolds*, *Mathematical Research Letters* 8 (2001) no. 5&6 (2001) 671-688.
27. *A new proof of Lee's theorem on the spectrum of conformally compact Einstein manifolds*, *Communication in Analysis and Geometry* 10 (2002), no.3, 647-651.
28. *The mass of asymptotically hyperbolic manifolds*, *Journal of Differential Geometry* 57 (2001), no.2, 273-299.

Synergistic Activities

1. taught a topic course in Riemannian Geometry at the Summer School in Geometry at Univ. of Science and Technology of China, May 14-June 13, 2013.
2. taught a course on geometric analysis at the Summer School in Geometry at Univ. of Science and Technology of China, June 7-July 5, 2012.
3. Co-organizer of Summer program in Mathematical Relativity, June 6-25, 2011, Beijing International Center of Math Research, Peking University, Beijing, China.
4. delivered 10 one-hour lectures on scalar curvature in geometry and relativity, summer program in Mathematical Relativity, June 6-25, 2011, Beijing International Center of Math Research, Peking University, Beijing, China.
5. taught a topic course at Univ. of Science and Technology of China, June 27-July 13, 2011.
6. Advisory committee, 2011-2013.
7. Graduate committee, 2012-2013.
8. Chair of the Hiring committee, 2010-2011.
9. Co-organized AMS Eastern Section Meeting, Special Session in Nonlinear Elliptic Equations and Geometric Inequalities, Mar. 15-16, 2008, New York.

10. Referee for various journals:

Journal of AMS, Advances in Math., Inventiones Mathematicae, American J. of Mathematics, J. für die Reine und Angewandte Math., Journal of Differential Geometry, Communications in Analysis and Geometry, Communications in Mathematical Physics, Communications in Partial differential Equations, Proc. of AMS, Transactions of AMS, etc.

Invited Talks

- Nov. 8, 2013 Geometry Seminar, Rutgers University at New Brunswick, New Jersey
- July 16, 2013 Research talk at Park City Mathematics Institute 2013, Park City, UT
- June 16-21, International conference on Analysis and Geometry, Wuyi Mountain, Fujian Province, China
- Jan. 5-9, 2013, Third Conference of Tsinghua Sanya International Mathematics Forum, Sanya, China.
- Nov. 9, 2012 Analysis seminar, Univ. of California, Irvine.
- Mar. 8, 2012 Geometry seminar, Univ. of Notre Dame.
- Nov. 7, 2011 Dynamics and Geometry seminar, Penn State Univ.
- June 27-July 1, 2011 Xiamen Conference on Geometric PDE, Xiamen, China
- Apr. 4, 2011 Geometry seminar, Ohio State University.
- Mar. 3, 2011 Colloquium, Univ. of Miami, Florida.
- Nov. 9, 2010 Analysis seminar, UC Irvine.
- Nov. 5-7, 2010 Special session on Differential geometry and its applications, AMS meeting, Univ. of Notre Dame.
- Oct. 9-10, 2010 The Second Oklahoma PDE Workshop, University of Oklahoma.
- Jul. 15, 2010 Univ. of Science and Technology of China, Hefei, China
- Jul. 13, 2010 Univ. of Science and Technology of China, Hefei, China.
- June 16, 2010 International Conference on Geometric Nonlinear PDEs, Beijing, China.
- May 11, 2010 Differential geometry seminar, UC Irvine.
- Feb. 6-7, 2010 Pacific Northwest Geometry Seminar, Stanford University.
- Jan. 22-28, 2010 Workshop on general relativity and geometric analysis, Monash University in Melbourne, Australia.

- Mar. 29, 2009 Special session on differential geometry and its applications, AMS meeting, Univ. of Illinois, Urbana-Champaign
- May 6, 2009 Geometric analysis seminar, Univ. of Wisconsin, Madison
- Nov. 14, 2008 Geometry Seminar, Princeton University

Ph. D. Student

- Ambar Rao Graduated in Spring, 2013

Courses Taught

- MTH 935 Complex Geometry, Fall 2013
- MTH 309 Linear algebra, Fall 2013
- MTH 309 Linear Algebra, Spring 2013
- MTH 930 Riemannian Geometry, Fall 2012
- MTH 936 Geometric Analysis, Spring 2012.
- MTH 425 Complex Variables, Spring 2012.
- MTH 868 Differentiable manifolds, Fall 2011.
- MTH 931 Riemannian Geometry II, Spring 2011.
- MTH 309 linear algebra, Spring 2010.
- MTH 935 Complex manifolds, Fall 2010.
- MTH 425 Complex variables, Spring 2009
- MTH 255H Honors calculus, Spring 2009
- MTH 993 Topics in geometry, Fall 2008
- MTH 935 Complex Geometry, Fall 2007, MSU
- MTH 931 Riemannian geometry II, Spring 2007, MSU
- MTH 868 Geometry and Topology I, Fall 2006, MSU
- MTH 340 ODE, Spring 2006
- MTH 255H Honors Calculus, Spring 2006, MSU
- MTH 935 Complex Manifolds, Fall 2005, Fall 2007 and Fall 2009, MSU

- MTH 425 Complex Variables, Fall 2004, Spring 2005 and Spring 2007, MSU
- Riemann surfaces, Spring 2004, MIT
- Calculus, Linear Algebra, ODE, Fall 2001-Fall 2003, MIT