

Weiyi Zhang

Mathematics Institute
Zeeman Building
University of Warwick
Coventry, CV4 7AL
United Kingdom

Phone: +44 (0) 24 7652 8318
Email: weiyi.zhang@warwick.ac.uk
Homepage: <http://homepages.warwick.ac.uk/staff/Weiyi.Zhang/>

Appointments

Associate Professor, University of Warwick, September 2016-now

Assistant Professor, University of Warwick, September 2013-August 2016.

Post-Doc Assistant Professor, University of Michigan, September 2010-August 2013.

Visting Member, I.H.E.S., Bures-sur-Yvette, France, May-July 2011.

Education

Ph.D. in Mathematics, University of Minnesota, Fall 2005-Spring 2010.

Thesis: Symplectic geometry and its connections with complex geometry
Advisor: Tian-Jun Li

B.S. in Mathematics, Peking University, Fall 2001-Spring 2005.

Research interests

Symplectic geometry, complex geometry and the interactions between them.

Teaching

MA4E0, Lie Groups, Term 1 2017-2018, University of Warwick

MA 3D9, Geometry of Curves and Surfaces, Term 1 2013-2016, 2018, University of Warwick

MA 4J7, Cohomology and Poincaré duality, Term 1 2013, University of Warwick

Math 215, Calculus III: Multivariable calculus, Summer 2013, University of Michigan

Math 433, Introduction to Differential Geometry, Winter 2013, University of Michigan

Math 431, Topics in Geometry for Teachers, Fall 2012, University of Michigan

Math 286, Honors Differential Equations, Winter 2012, University of Michigan

Math 216, Differential Equations, Fall 2011, University of Michigan

Math 286, Honors Differential Equations, Winter 2011, University of Michigan

Math 115, Calculus I, Fall 2010, University of Michigan

Math 1151, Precalculus II, Spring 2009, University of Minnesota

Math 1051, Precalculus I, Fall 2008, University of Minnesota

Math 1271, Calculus I, Spring 2008, University of Minnesota

Math 1051, Precalculus I, Fall 2007, University of Minnesota

Math 1031, College Algebra and Probability, Spring 2007, University of Minnesota

Math 1051, Precalculus I, Fall 2006, University of Minnesota

Grants and Awards

LMS conference grant, 2017

EPSRC First Grant EP/N002601/1, 2015-2017

LMS Scheme 1 Grant, 2014

AMS-Simons Travel Grant, 2011-2013

Doctoral Dissertation Fellowship, University of Minnesota, 2009-2010

President Research Fellowship, Peking University, 2003-2005

Publications

Intersection of almost complex submanifolds, arXiv:1707.08253, to appear in Camb. J. Math.

The curve cone for almost complex 4-manifolds, Proc. Lond. Math. Soc. (3), Vol. 115 (2017) no. 6, 1227–1275.

Geometric structures, Gromov norm and Kodaira dimensions, Adv. Math. 308 (2017), 1–35.

Almost Kähler forms on rational 4-manifolds, with T.-J. Li, Amer. J. Math. 137 (2015), no. 5, 1209–1256.

J-holomorphic curves in a nef class, arXiv:1210.3337, with T.-J. Li, Int. Math. Res. Not. (2015) Vol. 2015 12070–12104.

On cohomological decomposability of almost-Kähler structures, with D. Angella and A. Tomassini, Proc. Amer. Math. Soc. 142 (2014), no. 10, 3615–3630.

From Taubes currents to almost Kähler forms, Math. Ann. 356 (2013), no. 3, 969–978.

A note on exact forms on almost complex manifolds, with T. Draghici, Math. Res. Lett. 19 (2012), no. 3, 691–697.

On the J-anti-invariant cohomology of almost complex 4-manifolds, with T. Draghici and T.-J. Li, Q. J. Math. 64 (2013), no. 1, 83–111.

Geometry of tamed almost complex structures in dimension 4, with T. Draghici and T.-J. Li, Fifth International Congress of Chinese Mathematicians, Part 1, 2, 233–251, AMS/IP Stud. Adv. Math., 51, pt. 1, 2, Amer. Math. Soc., Providence, RI, 2012.

Additivity and relative Kodaira dimensions, with T.-J. Li, Geometry and Analysis, Vol. II, 103–135, Adv. Lect. Math. (ALM), 18, International Press, 2011.

Symplectic forms and cohomology decomposition of almost complex 4-manifolds, with T. Draghici and T.-J. Li, Int. Math. Res. Not. IMRN 2010, no. 1, 1–17.

Comparing tamed and compatible symplectic cones and cohomological properties of almost complex manifolds, with T.-J. Li, *Comm. Anal. Geom.* 17 (2009), no. 4, 651–683.

The Kodaira dimension of Lefschetz fibrations, with J. Dorfmeister, *Asian J. Math.* 13 (2009), no. 3, 341–357.

Some results on special stable vector bundles of rank 3 on algebraic curves, with B. Fang and X. Tan, *Acta Math. Sin. (Engl. Ser.)* 24 (2008), no. 3, 417–430.

Preprints

Moduli space of J-holomorphic subvarieties, arXiv:1601.07855, submitted.

Kodaira dimensions of almost complex manifolds, with H. Chen, arXiv:1808.00885, submitted.

J-holomorphic curves from closed J-anti-invariant forms, with L. Bontrone, arXiv:1808.09356, submitted.

Symplectic Blowing down in dimension six, with T.-J. Li and Y. Ruan.

The fundamental group of symplectic 4-manifolds with $b^+ = 1$, with A. Akhmedov, arXiv:1506.08367.

Talks

Geometry seminar, Université libre de Bruxelles, Bruxelles, Belgium, Sept 2018

Gauge-Topology-Symplectic seminar, Harvard University, Cambridge, US, Sept 2018

Geometry and Mathematical Physics seminar, Peking University, Beijing, China, Jun 2018

Geometry, Analysis and Mathematical Physics seminar, University of Science and Technology of China, Hefei, China, Jun 2018

Groups and Geometry seminar, University of Geneva, Geneva, Switzerland, Apr 2018

Geometry and Topology seminar, University of Glasgow, Glasgow, Feb 2018

Geometry seminar, Leeds University, Leeds, Feb 2018

Colloquium, University of Warwick, Nov 2017

KCL/UCL geometry seminar, King's College London, London, May 2017

Mathematischen Gesellschaft, Georg-August-Universität Göttingen, Göttingen, Germany, Jan 2017

Symplectic Geometry and Topology, International Centre for Mathematical Sciences, Edinburgh, July 2016

4th Workshop of Mathematics Inspired by String Theory, Chinese University of Hong Kong, Hong Kong, China, April 2016

Geometry Seminar, Central Florida University, Orlando, Mar 2016

Colloquium, Florida International University, Miami, Mar 2016

Colloquium, University of Miami, Miami, Mar 2016

Geometry Seminar, Purdue University, West Lafayette, Feb 2016

Differential Geometry/Symplectic Topology Seminar, University of Minnesota, Minneapolis, Feb 2016

Young Geometric Analysts' Forum 2016, Tsinghua Sanya International Mathematics Forum, Sanya, China, Jan 2016

Differential Geometry Seminar, University of Sheffield, Sheffield, Oct 2015

Advanced Frontier Lectures, University of Science and Technology of China, Hefei, China, April 2015

PDE, Complex Analysis and Differential Geometry seminar, University of Notre Dame, South Bend, Mar 2015

Differential Geometry seminar, Ohio State University, Columbus, Mar 2015

Geometry and Analysis seminar, University of Oxford, Oxford, Feb 2015

The London Topology and Geometry Seminar, Imperial College, London, Nov 2014

One day meeting on Complex Geometry and Symplectic Topology, University of Warwick, Coventry, Nov 2014

Conference on Symplectic Birational Geometry and its connection to Algebraic Geometry, University of Michigan, Ann Arbor, Oct 2014

Workshop on Topology and Invariants of 4-Manifolds, Simons Center for Geometry and Physics, Stony Brook, Aug 2014

KCL/UCL geometry seminar, University College London, London, June 2014

Geometry, Analysis and Mathematical Physics seminar, University of Science and Technology of China, Hefei, China, May 2014

Workshop on Algebraic Geometry, Sichuan University, Chengdu, China, May 2014

Algebraic Geometry seminar, University of Warwick, Coventry, Feb 2014

Conference on the Topology and Invariants of Smooth 4-Manifolds, University of Minnesota, Minneapolis, Aug 2013

Felix Klein seminar in geometry, University of Notre Dame, South Bend, April 2013

Seminar, Center for Quantum Geometry of Moduli Spaces, Aarhus University, Denmark, Mar 2013

Colloquium, University of Iowa, Iowa City, Feb 2013

Colloquium, University of Hong Kong, Hong Kong, China, Feb 2013

Geometry Seminar, University of Rochester, Rochester, Dec 2012

AMS Fall Eastern Sectional Meeting, Rochester Institute of Technology, Rochester, Sept 2012

Hangzhou Workshop on Differential Geometry, Zhejiang University, Hangzhou, China, May 2012

Geometry Seminar, Chinese University of Hong Kong, Hong Kong, China, May 2012

Analysis, Applied Math and Geometry Seminar, North Dakota State University, Fargo, Feb 2012

Geometry Seminar, University of Minnesota, Minneapolis, Oct 2011

18th Gökova Geometry/Topology Conference, Gökova, Turkey, May 2011

Departmental seminar, Fudan University, Shanghai, China, Feb 2011

Topology Seminar, University of Michigan, Ann Arbor, Oct 2010
AMS Fall Western Section Meeting, UCLA, Los Angeles, Oct 2010
Geometry Seminar, University of Minnesota, Minneapolis, April 2010
Geometry Seminar, University of Michigan, Ann Arbor, Dec 2009
AMS Fall Eastern Section Meeting, University Park, PA, Oct 2009
Topology and Geometry seminar, Rutgers University, Oct 2009
Symplectic Geometry and Gauge Theory, Columbia University, Oct 2009
Workshop on Symplectic Geometry and Topology, Beijing, China, June 2008
Geometry Seminar, University of Minnesota, Minneapolis, May 2007
Departmental Seminar, Zhejiang University, Hangzhou, China, 2007, 2008, 2009
Topology Seminar, Peking University, Beijing, China, 2004

Services

Postdoc mentoring:

Nicholas Lindsay (Institute of Mathematical Sciences, Shanghai Tech University), starting 2018

PhD students:

Thomas Holt, starting October 2018

Louis Bonthron (Joint with Peter Topping), starting October 2015

MPhil students:

Yiwen Chen, starting October 2016

MS students:

Yi Zhao, October 2015-September 2016, *A sheaf-free method of Kodaira embedding theorem*

Conference organizer/co-organizer:

Geometry and Mathematical Physics, University of Warwick, Coventry, Jul 2018

Symplectic geometry and mathematical physics, Joint International Meeting of the American Mathematical Society and the Chinese Mathematical Society, Fudan University, Shanghai, Jun 2018

Interactions of symplectic and algebraic geometry, University of Warwick, Coventry, Aug 2017

Great Lakes Geometry Conference, University of Michigan, Ann Arbor, Mar 2015

One day event on complex geometry and symplectic geometry, University of Warwick, Coventry, Nov 2014

Conference on Symplectic Birational Geometry and its connection to Algebraic Geometry, University of Michigan, Ann Arbor, Oct 2014

Warwick-Seoul National University symplectic geometry workshop, University of Warwick, Coventry, Feb 2014

Journals refereed:

Communications in Analysis and Geometry
Geometriae Dedicata
Inventiones Mathematicae (quick opinion)
Journal of Symplectic Geometry
Journal of Topology
Mathematical Research Letters
Pacific Journal of Mathematics
Proceedings of the American Mathematical Society
Results in Mathematics

Reviewer for:

Zentralblatt Math, Mathematical Reviews