

Botong Wang

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Education

2006 - 2012 PhD in Mathematics - Purdue University

Thesis title: *Filtered Local Systems and Parabolic Higgs Bundles.*
Thesis advisor: Donu Arapura

2002 - 2006 BA in Mathematics - Peking University

Employment History

2017 - now University of Wisconsin-Madison, Department of Mathematics
Assistant Professor

2016 - 2017 University of Wisconsin-Madison, Department of Mathematics
Visiting Assistant Professor

Fall 2015 KU Leuven, Department of Mathematics
Postdoctor

2012 - 2015 University of Notre Dame, Department of Mathematics
Visiting Assistant Professor

Awards, grants and fellowships

2017-2020 NSF grant DMS-1701305
Topology of Algebraic Varieties and Enumerative Combinatorial Geometry

2015-2017 Simons Travel Grant

2010-2011 Purdue Research Foundation Research Grant

2006-2007 Ross Fellowship, Purdue University

2002-2006 Mingde Scholarship, Peking University

2002 International Mathematics Olympiad Gold Medal (with perfect score)

Publications and Preprints

1. *Homomorphisms between the fundamental groups of Kähler manifolds*, **Proc. Amer. Math. Soc.** 139 (2011), no. 5, 1599-1603.
2. *Filtered local systems and parabolic Higgs bundles*, **Ph.D Thesis**, Purdue University. 2012
3. *Cohomology jump loci of quasi-projective varieties*, with Nero Budur, **Ann. Sci. École Norm. Sup.** (4) 48 (2015), no. 1, 227-236.
4. *Cohomology jump loci of differential graded Lie algebras*, with Nero Budur, **Compos. Math.** 151 (2015), no. 8, 1499-1528.

5. *Torsion points on the cohomology jump loci of compact Kähler manifolds*, **Math. Res. Lett.** 23 (2016), no.2, 545-563.
6. *The signed Euler characteristic of very affine varieties*, with Nero Budur, **Int. Math. Res. Not.** (2015), no.14, 5710-5714.
7. *Bounding the maximum likelihood degree*, with Nero Budur, **Math. Res. Lett.** 22 (2015), no.6, 1613-1620.
8. *Rank one local systems and forms of degree one*, with Nero Budur and Youngho Yoon, **Int. Math. Res. Not.** (2016), no.13, 3849-3855.
9. *The maximum likelihood degree of mixtures of independence models*, with Jose Rodriguez. **SIAM J. Appl. Algebra Geom.** 1 (2017), no. 1, 484-506.
10. *Recent results on cohomology jump loci*, with Nero Budur. **Hodge Theory and L2-analysis**, ALM 39, Higher Education Press and International Press (2017), 205-241.
11. *Local systems on analytic germ complements*, with Nero Budur. **Adv. Math.** 306 (2017), 905-928
12. *Maximum likelihood degree of Fermat hypersurfaces via Euler characteristics*, **Proc. Amer. Math. Soc.** 144 (2016), no. 5, 3649-3655.
13. *Cohomology support loci of local systems*, with Nero Budur, Yongqiang Liu and Luis Saumell, **Michigan Math. J.** 66 (2017), no. 2, 295-307.
14. *A Family of Compact Complex-Symplectic Calabi-Yau Manifolds that are Nonkähler*, with Lizhen Qin, to appear in **Geometry and Topology**.
15. *Enumeration of points, lines, planes, etc.* with June Huh, to appear in **Acta Math.**
16. *The monodromy theorem for compact Kähler manifolds and smooth quasi-projective varieties*, with Nero Budur and Yongqiang Liu, to appear in **Math. Ann.**
17. *Lefschetz classes on projective varieties*, with June Huh, to appear in **Proc. Amer. Math. Soc.**
18. *Cohomology jump loci of quasi-compact Kähler manifolds*, with Nero Budur, arXiv:1702.02186
19. *Algebraic surfaces with zero dimensional cohomology support locus*, to appear in **Taiwanese J. Math.**
20. *Absolute sets and the Decomposition Theorem*, with Nero Budur, arXiv:1702.06267
21. *Topology of subvarieties of complex semi-abelian varieties*, with Yongqiang Liu and Laurentiu Maxim, arXiv:1706.07491
22. *Generic vanishing for semi-abelian varieties and integral Alexander modules*, with Yongqiang Liu and Laurentiu Maxim, arXiv:1707.09806
23. *On the length of perverse sheaves and D-modules*, with Nero Budur, Pietro Gatti and Yongqiang Liu, arXiv:1709.00876
24. *Mellin transformation, propagation, and abelian duality spaces*, with Yongqiang Liu and Laurentiu Maxim, arXiv:1709.02870

Invited Talks

- Hodge Theory, Moduli and Representation Theory Conference at *Stony Brook University*, August 2017
- Algebraic geometry seminar at *Shanghai center for mathematical sciences*, China, August 2017
- One week summer course at *Nanjing University*, China, July 2017
- Singularity theory conference at *East China Normal University*, China, July 2017

- Workshop on Hyperplane Arrangements and Singularities, *KIAS*, Korea, June 2017
- Workshop on Algebraic Varieties With a Special Emphasis on Calabi-Yau Varieties and Mirror Symmetry at *Fields Institute, Toronto*, March 2017
- Special colloquium at *University of Toronto*, January 2017
- Algebraic geometry seminar and Colloquium at *UCSD*, January 2017
- Colloquium at *University of Wisconsin - Madison*, December 2016
- Colloquium at *Washington University in St. Louis*, November 2016
- Algebraic geometry seminar at *OSU*, November 2016
- Algebraic geometry seminar at *University of Wisconsin - Madison*, October 2016
- Conference “Young Researcher Symposium on Topology” at *Nanjing University*, China, August 2016
- Algebraic geometry seminar at *KAIST*, Korea, July 2016
- Algebraic geometry seminar at *IBS-CGP, Pohang*, Korea, July 2016
- Special session on “Algebraic geometry and singularities” in the Second Joint Conference of the Belgian, Royal Spanish and Luxemburg Mathematical Societies at *University of La Rioja*, Spain, June 2016
- Algebraic geometry seminar at *University of Chicago*, April 2016
- Algebraic geometry seminar at *Princeton University*, April 2016
- Algebraic geometry seminar at *Purdue University*, March 2016
- Conference “Singularities in the Midwest, III” at *University of Wisconsin-Madison*, March 2016
- AMS Sectional meeting “Special Session on Topology and Combinatorics of Arrangements (in honor of Mike Falk)” at *Stony Brook University*, March 2016
- AMS Sectional meeting “Special Session on Singularities in Algebra, Geometry and Topology”, *Loyola University Chicago*, October 2015
- Workshop on “Geometry, Topology, and Combinatorics of Hyperplane Arrangements and Related Problems”, *University of Zaragoza*, Spain, September 2015
- Topology and Geometry seminar, *University of Wisconsin - Madison*, March 2015
- Special colloquium, *University of Wisconsin - Madison*, January 2015
- Algebraic geometry seminar, *University of Michigan*, February 2014
- Algebraic geometry and commutative algebra seminar, *University of Notre Dame*, January 2014
- Algebra seminar, *University of Nice*, France, October 2013
- Number Theory and Algebraic Geometry seminar, *KU Leuven*, Belgium, October 2013
- Algebraic geometry seminar, *UIC*, September 2013
- Joint meeting of AMS and RMS, *University of Alba Iulia*, Romania, June 2013
- Algebraic geometry seminar, *Purdue University*, February 2013
- Algebraic geometry and commutative algebra seminar, *University of Notre Dame*, October 2012
- Algebra seminar, *Wagne State University*, September 2012
- Workshop on surface group representations, *CRM, Barcelona*, Spain, May 2012
- Algebraic geometry seminar, *Purdue University*, October 2011
- Midwest Algebraic Geometry Graduate Conference, *University of Wisconsin-Madison*, October 2010
- Algebraic geometry seminar, *Purdue University*, September 2009

Conference organized

Singularities in the Midwest, IV at University of Wisconsin - Madison (with Manuel Gonzalez Villa and Laurentiu Maxim), March 2017

Other services

Referee for: (1) Trans. Amer. Math. Soc. (2) Adv. Math. (3) Math. Ann.

Coordinator for 54th IMO (International Mathematical Olympiad) at Colombia, 2013.

Short Term Visits and Conferences

- **USTC**, Hefei, China, July 2017
- **KIAS**, Seoul, Korea, June 2017
- **KIAS**, Seoul, Korea, August 2016
- **KU Leuven**, Leuven, Belgium, June 2016
- **Luminy**, France, May-June 2016
- **KU Leuven**, Leuven, Belgium, May-June 2015
- **KU Leuven**, Leuven, Belgium, May-June 2014
- **KU Leuven**, Leuven, Belgium, March 2014
- **Oberwolfach**, Germany, February 2014
- **KU Leuven**, Leuven, Belgium, October 2013