

Julie Tzu-Yueh Wang(Research Fellow)

Employment

01/2003-present	Full Research Fellow in the Institute of Mathematics, Academia Sinica
06/1999-01/2003	Associate Research Fellow in the Institute of Mathematics, Academia Sinica
06/1996-06/1999	Assistant Research Fellow in the Institute of Mathematics, Academia Sinica
09/1995-05/1996	Instructor in the University of Texas at Austin, USA
08/2006-present	Joint Appointment Professor in the National Tsing Hua University
05/2024-present	Joint Appointment Professor in the National Taiwan University

Education

Ph.D. in Mathematics (08/1991-06/1995)	University of Notre Dame Thesis Advisor: Pit-Mann Wong
Fellowship in Mathematics (08/1988-07/1990)	Academia Sinica, Taiwan Advisor: Jing Yu
B.S. in Mathematics (09/1985-09/1988)	National Tsing Hua University, Taiwan

Research Interests

Diophantine geometry, Diophantine approximation, and Nevanlinna theory

Academic Activities(2006-)

International Visiting

- MSRI, USA, January 9-June 20, 2006.
- Insitute of Mathematics, Hanoi, Vietnam. July 17-22, 2007.
- Kaist, Daejeon, Korea. June 22-28, 2014.
- University of Houston, Texas, USA. May 15-18, 2017
- Nihon University, Tokyo, Japan, June 22-29, 2018

International Conferences and Seminars (2008-)

- Workshop on complex geometry and related topics, Fields Institute, Toronto, Canada. November 17-21, 2008. *invited speaker*
- Modular forms and function field arithmetic(a conference in honor of Jing Yu's 60th birthday), Taiwan University, May 19-22, 2009. *invited speaker*
- Conference on Value Distribution Theory and Complex Geometry, NCTS, July 17-30, 2009. *organizer*
- Joint meeting of the A.M.S. and Shanghai Math. Soc. Shanghai, China, Dec. 17-21, 2010. *contributed talk*
- Workshop on complex geometry, Hong Kong University, July 21-23, 2010. *invited speaker*

- 18th International conference on finite or infinite dimensional complex analysis and application, Macau University, August 13-18, 2010. *contributed talk*
- Frontiers of Nevanlinna Theory, University College London, March 26-28, 2011. *invited speaker*
- East Asia Number Theory Conference, National Taiwan University, January 16-19, 2012. *invited speaker*
- International Conference on Nevanlinna Theory and Complex Geometry, University of Notre Dame, USA, March 14-18, 2012. *invited speaker*
- Conference on Diophantine problems and arithmetic dynamics, Academia Sinica, June 24-28, 2013. *organizer*
- Banff Conference on “Vojta’s conjecture”, Banff, Canada, September 29-October 3, 2014. *invited speaker*
- Banff Conference on “Distribution of rational and holomorphic curves in algebraic varieties”, Banff, Canada, March 15-20, 2015. *invited speaker*
- International conference on “Nevanlinna theory and Diophantine approximation”, Hanoi, Vietnam, June 22-25, 2017. *invited speaker*
- Banff Conference on “Diophantine approximation and algebraic curves”, Banff, Canada, July 2-7, 2017. *invited participant*
- 2017 NCTS (Taiwan) - POSTECH (Korea) Joint Workshop on Number Theory, Taipei, Taiwan, December 27-29, 2017. *invited participant*
- The 7-th East Asia Number Theory Conference, National Taiwan University, February 5-9, 2018. *invited speaker*
- The special session ”Complex Geometry and Several Complex Variables” of the AMS-CMS Shanghai meeting, Fudan University, China, June 11-14, 2018 *invited speaker*
- Meigaku-Nichidai Seminar, Nihon University, Tokyo, Japan, June 23, 2018 *invited speaker*
- Annual meeting of the Taiwanese Mathematics Society, Taiwan Normal University, December 8-9, 2018 *invited speaker*
- NCTS International Conference on “Arithmetic of Function Fields and Diophantine Geometry”, Taiwan University, May 20-24, 2019 *invited speaker*
- The special session “Value Distribution Theory, Complex Geometry, Diophantine Approximation, and Related Topics” of the AMS-VMS, Quy Nhon, Vietnam from June 10-13, 2019 *invited speaker*
- International Conference on Nevanlinna theory and complex hyperbolicity, Shanghai Center for Mathematical Sciences, July 25-27, 2019 *invited speaker*
- Number Theory Online Conference, CARMA(Computer-Assisted Research Mathematics and its Application), Australian MSI, June 3-5, 2020 *invited speaker*
- Number Theory Web Seminar, September 29, 2020. *Speaker*
- Geometric and Arithmetic Frontier of Orbifolds: a focus introductory workshop, QUAM, Montreal, Canada, May 30-June 3, 2022. *organizer, invited speaker(online)*
- Banff Conference on “Specialisation and Effectiveness in Number Theory”, Banff, Canada, August 28-September 2, 2022. *organizer*

- 2022 Pacific Rim Mathematical Association Congress, Vancouver, Canada, December 04-10, 2022. *Special Session invited speaker*
- Geometric and Arithmetic Frontiers of Orbifolds II: Arithmetic and hyperbolicity, IRMA - Université de Strasbourg, France, June 5-9, 2023. *organizer*
- International conference on Rationality and Hyperbolicity, Center for Mathematics Notre Dame, South Bend, Indiana, USA, June 26-30, 2023. *invited speaker*
- International Workshop on Several Complex Variables, Complex Geometry and Diophantine Geometry, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, August 14-18, 2023. *organizer*
- Workshop on Complex Geometry, Institute of Mathematical Research, Hong Kong University, Hong Kong, October 24-27, 2023. *invited speaker*
- Workshop on Singularity Theory and Hyperbolicity, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK, March 18-22, 2024. *invited speaker*
- Workshop on Index Theory and Complex Geometry Part 2, Institute for Mathematical Sciences, National University of Singapore, Singapore, April 29-May 3, 2024. *invited speaker*

Editorial Board

- Editor of the Taiwanese Journal of Mathematics 08/2004-06/2010
- Editor of the special issue Bulletin of the Institute of Mathematics Academia Sinica, Vol. 9, no. 4, 2014 for the 2013 conference on “Diophantine problems and arithmetic dynamics”
- Editor-in-Chief of the Taiwanese Journal of Mathematics 08/01/2014-07/31/2017

Postdoctors:

- Ta Thi Haoi An (2001-2002, AS Post-doctorship 2002-2004),
- Hsiu-Lien Huang (2010-2012, 2013-2014),
- Chia-Liang Sun (2011-2013, AS Post-doctorship 2013-2015, 2020-2021),
- Huei-Jeng Chen (2012-2013),
- Jia-Wei Guo (2015)
- Saud Hussein (AS Post-doctorship 2016-2018)
- Ji Guo (AS Post-doctorship 2019-2021)

Ph.D student:

- Ji Guo (National Tsing Hua University 2015-2019)
- Kelvin Lien (National Taiwan University 2023-)

Teaching:

- Abstract Algebra in Taiwan University (2012-2013, two semesters)
- Introduction to Arithmetic Geometry in Tsing Hua University (2015 fall semester)
- Topic in Complex Analysis: Riemann Surfaces in Tsing Hua University (2016 fall semester)

- Topic in Algebraic Geometry in Tsing Hua University (2017 fall semester)
- Introduction to Algebraic Geometry in Tsing Hua University (2018 fall semester)
- Elliptic Curves in Tsing Hua University (2019 fall semester)
- Riemann Surfaces and Algebraic Curves in Tsing Hua University (2022 spring semester)
- AS Summer Undergraduate Research Program “Cryptography” (partial, 2015-2019)

Committee works in AS

- senior/executive committee, the committee for summer undergraduate research program and the committee for selecting research trainees.
- (Elected) Academia Sinica assembly representative 2019-2023. (two terms)
- AS committee for Sexual Harassment Prevention and Appeal 2022-present

Committee works outside AS

- NCTS program committee 08/2008-07/2009
- Committee of the Mathematics Research Promotion Center 2009-2010
- Director of the Mathematics Research Promotion Center 2011-2013
- Board of Administration of the Taiwan Mathematical Society 2012-2019
- Board of Supervisors of the Taiwanese Journal of Mathematics 2017-2019
- Consulting Committee of the Olympia competition program of the Ministry of Education in 2011-2013 and 2018-present
- NSTC review committee 2024-

Publications

1. (with Ji Guo, and Carlo Gasbbari) Campana conjecture for coverings of toric surfaces over function fields, arXiv:2401.13186.
2. (with Carlo Gasbbari, Erwan Rousseau and Amos Turchet) Simply connectedness and hyperbolicity, arXiv:2308.13240.
3. (with Ji Guo, Khoa D. Nguyen and Chia-Liang Sun) Vojta’s abc Conjecture for algebraic tori and applications over function fields, arXiv:2106.15881v3.
4. (with Ji Guo) A complex case of Vojta’s general abc conjecture and cases of Campana’s orbifold conjecture, Transactions of the American Mathematical Society, 377 (2024), no. 7, 4861–4991.
5. (with Erwan Rousseau and Amos Turchet) Divisibility of polynomials and degeneracy of integral points, Math. Ann. 388 (2024), no. 2, 1969-1999.
6. (with Ji Guo and Chia-Liang Sun) A truncated second main theorem for algebraic tori with moving targets and applications, Journal of the London Mathematical Society, 106(2022), no. 4, 3607-3686.

7. (with Ji Guo and Chia-Liang Sun) On Pisot's d -th root conjecture for function fields and related GCD estimates, *Journal of Number Theory*, 231 (2022), 401-432.
8. (with Min Ru) The Ru-Vojta result for subvarieties, *International Journal of Number Theory*, 18 (2022), no. 1, 61-74
9. (with Erwan Rousseau and Amos Turchet) Nonspecial varieties and Generalized Lang-Vojta conjectures, *Forum of Mathematics, Sigma*, (2021) 9, e11
10. (with Ji Guo and Chia-Liang Sun) On the d -th roots of exponential polynomials and related problems arising from Green-Griffiths-Lang conjecture, *The Journal of Geometric Analysis*, 31 (2021), no. 05, 5201–5218
11. (with Yu Yasufuku) Greatest common divisors of integral points of numerically equivalent divisors, *Algebra & Number Theory*, 15 (2021), no.1. 287-305.
12. (with Nathan Grieve) GCD with moving targets and consequences for linear recurrence sequences, *Transactions of the American Mathematical Society*, 373 (2020), no. 11, 8095–8126.
13. (with Aaron Levin) Greatest common divisors of analytic functions and Nevanlinna theory on algebraic tori, *J. Reine Angew. Math.*, 769 (2020), 77-107, 2020-10. (published online on 2019-11-09).
14. (with Ji Guo) Asymptotic GCD and divisible sequences for entire functions, *Transactions of the American Mathematical Society*, 371 (2019), no. 9, 6241-6256.
15. (with Chia-Liang Sun) Integral points off hyperplanes in positive characteristic, *Journal of Number Theory*, 183 (2018), 233-248.
16. (with Min Ru) A second main theorem for subvarieties, *Algebra & Number Theory*, 11 (2017), no. 10, 2323-2337.
17. (with Hector Pasten) GCD bounds for analytic function, *International Mathematics Research Notices*, (2017), no. 1, 47-95.
18. (with Aaron Levin) On non-Archimedean curves omitting few components and their arithmetic analogues, *Canadian Journal of Mathematics*, 69 (2017), no.1, 130-142
19. (with Ta Thi Hai An, and William Cherry) Supplement and Erratum to “Algebraic degeneracy of non-Archimedean analytic maps[*Indag. Math. (N.S.)* 19 (2008) 481-492]”, *Indagationes Mathematicae* 26(2015), 329-336.
20. (with Hector Pasten) Extensions of Büchi's higher powers problem to positive characteristic, *International Math. Research Notices*, (2015), no. 11, 3263-3297.
21. (with Hsiu-Lien Huang, and Andreas Schweizer) On the exponential local-global principle for meromorphic functions and algebraic functions, *Archiv der Mathematik*, 102(2014), no. 5, 423-436
22. (with Hsiu-Lien Huang, and Chia-Liang Sun) Integral orbits over function fields, *International Journal of Number Theory*, 10(2014), no. 8, 2187-2204
23. (with Ta Thi Hoai An, and Hsiu-Lien Huang) Generalized Buchi's problem for algebraic functions and meromorphic functions, *Mathematische Zeitschrift* 273(2013), no.1, 95-122.

24. Hensley's problem for function fields, *International Journal of Number Theory*, 8(2012), no. 2, 507-524.
25. (with Min Ru) An effective Schmidt's subspace theorem for projective varieties over function fields, *International Math. Research Notices*, (2012), no 3, 651-684.
26. (with Ta Thi Haoi An) Hensley's problem for complex and non-Archimedean meromorphic functions, *Journal of Mathematical Analysis and Applications*, 381(2011), 661-677.
27. (with Ta Thi Haoi An, and Aaron Levin) A p -adic Nevanlinna-Diophantine Correspondence, *Acta Arithmetica*, 146(2011), 379-397.
28. (with Chien-Wei Lin) Generalizations of rigid analytic Picard theorems, *Proc. Amer. Math. Soc.* 138(2010),133-139
29. (with Ta Thi Haoi An, and William Cherry) Algebraic degeneracy of non-Archimedean analytic maps, *Indagationes Mathematicae* 19(2008), 481-492.
30. (with Ta Thi Haoi An, and Pit-Mann Wong) Non-archimedean analytic curves in the complements of divisors, *Journal of Number Theory*, 128(2008), 2275-2281.
31. (with Ta Thi Haoi An) An effective Schmidt's subspace theorem for non-linear forms over function fields, *Journal of Number Theory*, 125(2007), 210-228.
32. (with Ta Thi Haoi An) Unique range sets and uniqueness polynomials for algebraic curves, *Transaction of A.M.S.*, 359(2007), 937-964.
33. (with Min Ru), A second main theorem on parabolic manifolds, *Asian J. Math.* 9 (2005), 349-371
34. (with Ta Thi Haoi An), Unique range sets for non-Archimedean entire functions in positive characteristic fields, , *Ultrametric functional analysis*, 323-333, *Contemp. Math.*, 384, Amer. Math. Soc., Providence, RI, 2005
35. Uniqueness polynomials, unique range sets and other uniqueness theorems, *Ultrametric functional analysis*, 359-369, *Contemp. Math.*, 384, Amer. Math. Soc., Providence, RI, 2005
36. (with Ta Thi Haoi An and Pit-Mann Wong), Unique range sets and uniqueness polynomials in positive characteristic II, *Acta Arithmetica* , 116 (2005) 115-143
37. (with Ta Thi Haoi An and Pit-Mann Wong), Strong uniqueness polynomials: the complex case, *Journal of Complex Variables and it's Application* 49 (2004), 35-54
38. An effective Schmidt subspace theorem over function fields, *Mathematische Z.* 204 (2004), 811-844
39. (with Liang-Chung Hsia), Wronskians and ABC theorem for higher dimensional function fields of arbitrary characteristic, *Transactions of A.M.S.*, 356 (2004), 2871-2887
40. (with Min Ru), Truncated second main theorem for moving targets, *Transactions of A.M.S.* 356 (2004), 557-571
41. (with Ta Thi Haoi An and Pit-Mann Wong), Unique range sets and uniqueness polynomials in positive characteristic, *Acta Arithmetica* 109 (2003), 259-280

42. (with Ta Thi Haoi An), Uniqueness polynomials for meromorphic functions, *International J. of Math.* 13 (2002), 1095-1115
43. (with William Cherry), Non-Archimedean analytic maps to algebraic curves, *Contemporary Mathematics* 303, American Mathematical Society, (2002), 7-36
44. Uniqueness polynomials and bi-unique range sets for rational functions and non-archimedean meromorphic functions, *Acta Arithmetica* 104 (2002), 183-200
45. (with William Cherry), Uniqueness polynomials for entire functions, *International J. of Math.*, 13 (2002), 323-332
46. The Mordell-Weil theorem for Drinfeld modules over finitely generated function fields, *Manuscripta*, 106 (2001), 305-314.
47. A generalization of Picard's theorem with moving targets, *Journal of Complex Variables and it's Application*, 44 (2001), 39-45.
48. Cartan's conjecture with moving targets of same growth and effective Wirsing's theorem over function fields, *Mathematische Z.* 234 (2000), 739-754.
49. (with Min Ru) Diophantine approximation with algebraic points of bounded degree, *Journal of Number Theory* 81 (2000), 110-119.
50. ABC estimate, integral points, and geometry of \mathbb{P}^n minus hyperplanes, *Mathematical Research Letters* 6 (1999), 357-370.
51. A note on Wronskians and ABC theorem in function fields of prime characteristic, *Manuscripta*, 98 (1999), 255-264.
52. S-integral points of projective spaces omitting hyperplanes over function fields of positive characteristic, *Journal of Number Theory*, 77 (1999), 336-346
53. (With Jing Yu) On class number relations over function fields, *Journal of Number Theory*, 69 (1998), 181-196
54. S-integral points of $\mathbb{P}^n-2n + 1$ hyperplanes in general position over number fields and function fields, *Transactions of the American Mathematical Society*, 348(8)(1996), 3379-3389.
55. An effective Roth's theorem of function fields, *The Rocky Mountain Journal of Mathematics*, 26(1996), 1225-1234.
56. The truncated second main theorem of function fields, *Journal of Number Theory*, 58(1996), 137-159.