

Fu-Tsun Wei

Curriculum Vitae

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Personal Data

Mailing Address Department of Mathematics, National Tsing Hua University, No. 101, Sec. 2, Guangfu Rd., Hsinchu 300, Taiwan
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Employment

2021/Aug-present **Professor**, *Department of Mathematics, National Tsing Hua University, Taiwan.*
2018/Aug-2021/Jul **Associate Professor**, *Department of Mathematics, National Tsing Hua University, Taiwan.*
2016/Aug-2018/Jul **Assistant Professor**, *Department of Mathematics, National Central University, Taiwan.*
2013/Sep-2016/Jul **Research Scholar**, *Institute of Mathematics, Academia Sinica, Taiwan.*
2010/Oct-2013/Sep **Post-doctor (military service)**, *Department of Mathematics, National Tsing Hua University, Taiwan.*

Education

2005–2010 **PhD in Mathematics**, *National Tsing Hua University.*
PhD Thesis: On Arithmetic of Curves over Function Fields.
Advisor: Professor Jing Yu
2003–2005 **MS in Mathematics**, *National Tsing Hua University.*
MS Thesis: On Structure of Drinfeld Modules.
Advisor: Professor Jing Yu
1999–2003 **BS in Mathematics**, *National Taiwan Normal University.*

Research Interest

Number Theory

Special values of Eisenstein series over function fields
Drinfeld modular varieties and Drinfeld modular forms
Drinfeld modules, t -modules, and t -motives

Publications

- [1] Fu-Tsun Wei and Jing Yu, On the independence of Heegner points in the function field case, **Journal of Number Theory** 130 (2010) 2542-2560.
- [2] Fu-Tsun Wei and Jing Yu, Theta series and function field analogue of Gross formula, **Documenta Mathematica** 16 (2011) 723-765.
- [3] Fu-Tsun Wei and Chia-Fu Yu, Mass formula of division algebras over global function fields, **Journal of Number Theory** 132 (2012) 1170-1184.
- [4] Fu-Tsun Wei, On metaplectic forms over function fields, **Mathematische Annalen** Volume 355 Issue 1 (2013) 235-258.
- [5] Fu-Tsun Wei, On Rankin triple product L -functions over function fields: central critical values, **Mathematische Zeitschrift** Volume 276 Issue 3 (2014) 925-951.
- [6] Fu-Tsun Wei and Chia-Fu Yu: Class numbers of central simple algebras over global function fields, **International Mathematics Research Notices** rnu038, 51 (2014) 1-51.
- [7] Chih-Yun Chuang & Ting-Fung Lee & Fu-Tsun Wei & Jing Yu, Brandt matrices and theta series over global function fields, **Memoirs of the American Mathematical Society** Volume 237 Number 1117 (2015).
- [8] Fu-Tsun Wei: On the Siegel-Weil formula over function fields, **The Asian Journal of Mathematics** Volume 19 Number 3 (2015) 487-526.
- [9] Mihran Papikian & Fu-Tsun Wei, The Eisenstein ideal and Jacquet-Langlands isogeny over function fields, **Documenta Mathematica** 20 (2015) 551-629.
- [10] Mihran Papikian & Fu-Tsun Wei, On the Eisenstein ideal over function fields, **Journal of Number Theory** (Special issue in honor of Winnie Li) 161 (2016) 384-434.
- [11] Chih-Yun Chuang & Fu-Tsun Wei & Jing Yu, On central critical values of Rankin-type L -functions over global function fields, **Proceedings of London Mathematical Society** (3) 114 (2017) 333-373 (DOI: 10.1112/plms.12009).
- [12] Fu-Tsun Wei, Kronecker limit formula over global function fields, **American Journal of Mathematics**. vol. 139 no. 4 (2017) 1047-1084.
- [13] Mihran Papikian & Fu-Tsun Wei, The rational torsion subgroups of Drinfeld modular Jacobians and Eisenstein pseudo-harmonic cochains, **Mathematische Zeitschrift** Volume 287 Issue 1-2 (2017) 521-546 (DOI 10.1007/s00209-016-1835-2).
- [14] Fu-Tsun Wei, Green's functions on Mumford curves, **Mathematische Annalen** Vol. 370, Issue 3-4 (2017) 1571-1605 (DOI 10.1007/s00208-017-1560-0).
- [15] Chih-Yun Chuang & Fu-Tsun Wei, Waldspurger formula over function fields, **Transactions of the American Mathematical Society** 371 (2019) 173-198.
- [16] Fu-Tsun Wei & Takao Yamazaki, Generalized Jacobians of modular and Drinfeld modular curves, **Forum Mathematicum** Volume 31 Issue 3 (2019) 647-659.
- [17] Fu-Tsun Wei, On the derivative of Siegel-Eisenstein series over function fields, **Journal of the London Mathematical Society** (2) 100 (2019) 518-544.
- [18] Fu-Tsun Wei, On Kronecker terms over global function fields, **Inventiones mathematicae** 220 (2020) 847-907.
- [19] Cécile Armana & Fu-Tsun Wei, On Sturm-type bounds for modular forms over function fields, **Journal of Number Theory** 237 (2020) 67-98.
- [20] Jia-Wei Guo & Fu-Tsun Wei, On class number relations and intersections over function fields, **Documenta Mathematica** 27 (2022) 1321-1368.
- [21] Jia-Wei Guo & Fu-Tsun Wei, On CM masses over global function fields, **Mathematische Zeitschrift** 303, 29 (2023).

- [22] Mihran Papikian & Fu-Tsun Wei, Drinfeld discriminant function and Fourier expansion of harmonic cochains, **Mathematische Annalen** 388 (2024) 379-1435.
- [23] Fu-Tsun Wei, Algebraic relations among special gamma values and the Chowla-Selberg phenomenon over function fields, **Inventiones mathematicae** (2026) (DOI 10.1007/s00222-026-01406-8).

Preprints

- [1] W. Dale Brownawell, Chieh-Yu Chang, Matthew A. Papanikolas, and Fu-Tsun Wei, Function field analogue of Shimura's conjecture on period symbols, submitted.
- [2] Chieh-Yu Chang, Fu-Tsun Wei, and Jing Yu, Algebraic relations of special v -adic arithmetic gamma values and their period interpretations, submitted.
- [3] Özge Ülkem and Fu-Tsun Wei, Intersections of Hecke correspondences on the modular varieties of \mathcal{D} -elliptic sheaves, submitted.
- [4] Fu-Tsun Wei, Several-variable Kronecker limit formula over global function fields, submitted.

Honors

- 2005 National Tsing Hua University Chancellor Scholarship.
- 2010 Ph. D. Dissertation Gold Medal Award of the Mathematical Society of the Republic of China.
- 2012 Post Doctoral Research Article Award of National Science Council.
- 2016 2016 NCTS Young Theoretical Scientists Award.
- 2018 The 6th Young Scholar Innovation Award, Foundation for the Advancement of Outstanding Scholarship.
- 2018 Ta-You Wu Memorial Award, Ministry of Science and Technology.
- 2018 Outstanding Research Award, Ministry of Science and Technology.
- 2019 New Faculty Research Award, National Tsing Hua University.
- 2019 Young Mathematician Award, The Mathematical Society of ROC.
- 2019 ICCM Best Paper Award – Distinguished Paper.
- 2020 ICCM Best Paper Award – Silver Medal.
- 2022 Academia Sinica Early Career Investigator Research Achievement Award.
- 2023 Outstanding Research Award, National Science and Technology Council.

International Visiting

- 2009 Mar -Nov McGill University, Montreal, Canada (supported by the Graduate Students Study Abroad Program of National Science Council).
- 2011 Sep-Dec McGill University, Montreal, Canada (funded by the Centre Interuniversitaire en Calcul Mathématique Algébrique).
- 2013 Mar-Jul Max Planck Institute for Mathematics, Bonn, Germany (granted by the Max Planck Institute).
- 2013 Dec -2014 Feb Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France (granted by IHÉS).
- 2014 May 1-11 Hong Kong University of Science and Technology, Hong Kong (granted by HKUST).
- 2016 Mar 6-31 National University of Singapore, Singapore (granted by IMS).
- 2020 Feb 2-8 University of Newcastle, Australia.

Invited talks

- 2007/11/3,4 Conference on "Galois theory and related topics" at Yamagata University, Yamagata, Japan.
- 2009/12/16-20 2009 Joint Meeting of the KMS and AMS at Ewha Womans University, Seoul, Korea.
- 2009/12/19-20 POSTECH BSRI 2009 Special Year Program "The first POSTECH-Taiwan Workshop-Number Theory" at Postech, Pohang, Korea.
- 2010/7/7-9 2010 NCTS International Conference on Automorphic Forms and Related Topics at NCTS, Hsinchu, Taiwan.
- 2011/6/20-23 2011 NCTS International Conference on Galois Representations, Automorphic Forms and Shimura Varieties at NCTS, Hsinchu, Taiwan.
- 2011/8/16-19 The Arithmetic of Function Fields and Related Topics at ASARC, Gyeongju, Korea.
- 2012 1/16-19 East Asia Number Theory Conference at TIMS-NTU, Taipei, Taiwan.
- 2012 4/19 Workshop in Number Theory at Tsinghua University, Beijing, China.
- 2012 8/13-18 Penn State-Göttingen Number Theory Conference 2012 at Göttingen University, Göttingen, Germany.
- 2012 8/27-9/7 2012 NCTS Japan-Taiwan Joint Conference on Number Theory at NCTS, Hsinchu, Taiwan.
- 2013 4/18 Oberseminar at Max Planck Institute for Mathematics, Bonn, Germany.
- 2013 5/2 Number Theory Lunch Seminar at Max Planck Institute for Mathematics, Bonn, Germany.
- 2013 6/10 Number Theory Seminar at Universität des Saarlandes, Saarbrücken, Germany.
- 2013 6/28 Oberseminar at University Heidelberg, Heidelberg, Germany.
- 2014 2/11 Séminaire de Mathématiques at Institut des Hautes Études Scientifiques, Bures-sur-Yvette, France.
- 2014 5/2,5,7,9 Lectures on Drinfeld modules at Hong Kong University of Science and Technology, Hong Kong.
- 2014 5/7 IMS Number Theory Seminar at The Chinese University of Hong Kong, Hong Kong.
- 2014 6/9-13 Workshop on Function Field Arithmetic, Şirince, Turkey.
- 2014 9/1-6 Taiwan-Japan Joint Conference on Number Theory 2014, Kesennuma, Japan.
- 2014 12/6,7 The International Mathematical Meeting and the Annual Meeting of the Taiwanese Mathematical Society at National Cheng Kung University, Tainan, Taiwan.
- 2016 1/18-22 Conference on Algebraic Number Theory at Tsinghua Sanya International Mathematical Forum, Hainan, China.
- 2016 3/6-31 New Developments in Representation Theory at Institute of Mathematical Sciences, National University of Singapore.
- 2016 7/11-15 Pan Asia Number Theory Conference 2016 at Academia Sinica, Taipei City, Taiwan.
- 2016 8/22-26 The 6th East Asia Number Theory Conference at Chern Institute of Mathematics, Nankai University, Tianjin, China.
- 2016 9/8-13 Japan-Taiwan Joint conference on Number theory 2016 at National Center for Theoretical Sciences, Taipei City, Taiwan.
- 2016 12/10,11 2016 Taiwan Mathematical Society Annual Meeting at National Dong Hwa University, Hualien, Taiwan.
- 2017 6/26-30 Arithmetic of Function Fields, dedicated to the memory of David Goss, Münster, Germany.
- 2017 9/11-15 Workshop on P-Adic L-Functions and Algebraic Cycles at Academia Sinica, Taipei, Taiwan.
- 2018 9/3-7 Japan-Taiwan Joint conference on Number theory 2018 at Goto city, Nagasaki, Japan.
- 2018 11/5-9 New developments in the theory of modular forms over function fields at Centro di Ricerca Matematica, Pisa, Italy.

- 2018 12/8,9 2018 Taiwan Mathematical Society Annual Meeting at National Taiwan Normal University, Taipei, Taiwan.
- 2019 3/22-24 AMS Sectional Meeting, at the University of Hawaii, Manoa, Honolulu, Hawaii., USA.
- 2019 5/30-6/1 2019 Postech-PMI and NCTS Joint workshop on number theory, Postech, Pohang, Korea.
- 2019 6/10,11 The 8th International Congress of Chinese Mathematicians, Tsinghua University, Beijing, China.
- 2019 8/25-30 The 8th East Asia Number Theory Conference, KAIST, Daejeon, Korea.
- 2020 6/3-5 Number Theory Online Conference, CARMA.
- 2020 10/3,4 AMS Eastern Sectional Meeting, Online.
- 2020 12/5,6 TMS Annual Meeting, Fu-Jen Catholic University, Taipei, Taiwan.
- 2020 12/29 ICCM Annual meeting, online.
- 2022 7/18-22 AMS-EMS-SMF Joint International Meeting 2022, Université Grenoble Alpes, Grenoble, France.
- 2022 9/21,22 NCTS workshop on Function Field Arithmetic, National Tsing Hua University, Hsinchu, Taiwan.
- 2023 1/16,17 TMS Annual Meeting, National Tsing Hua University, Hsinchu, Taiwan.
- 2023 2/13-17 The 10th East Asia Number Theory Conference, Online.
- 2024 7/23-26 THE 2nd AMS-UMI International Joint Meeting, Palermo, Italy.
- 2025 12/15-19 2025 Taipei Conference on Arithmetic Geometry, Academia Sinica, Taipei, Taiwan.

Conferences organized

- 2023 8/21-25 Japan – Taiwan Joint Conference on Number Theory 2023, National Penghu University of Science and Technology, Penghu, Taiwan.
- 2024 1/8-11 Postech PMI – NCTS Joint Workshop on Number Theory, POSCO ChangeUp Ground, South Korea.

Conferences attended

- 2005 12/5-9 "Algebraic Number Theory and Related Topics" at RIMS, Kyoto.
- 2006 7/17-29 Asian-French Summer School in Algebraic Geometry and Number Theory 2006: Motives and relative topics at IHÉS.
- 2007 6/18-27 Conference on Langlands and Geometric Langlands Program at Guangzhou, China.
- 2007 7/9-27 Summer school and conference on Automorphic forms and Shimura varieties at ICTP, Italy.
- 2009 6/22-7/3 Automorphic forms and L-functions: computational aspects at Montreal University, Montreal, Canada.
- 2009 9/27-10/2 t-motives: Hodge structures, transcendence and other motivic aspects at BIRS, Banff, Canada.
- 2011 1/14-1/21 Postech Winter School 2011: Serre's modularity conjecture at Postech, Pohang, Korea.
- 2011 3/12-16 Arizona Winter School 2011: Stark-Heegner points, University of Arizona in Tucson, AZ., U.S.A.
- 2012 1/6-14 Postech Winter School 2012: The Birch and Swinnerton-Dyer conjecture at Postech, Pohang, Korea.
- 2013 6/3-7 Arithmetic & Geometry: 25 Years Number Theory Seminar at ETH, Zürich, Switzerland.
- 2013 7/1-7/5 Journées Arithmétiques JA2013 at Université Grenoble I, Grenoble, France.
- 2015 1/18-23 GYSS@one-north 2015 at Nanyang Technological University, Singapore.

- 2017 7/19-28 Iwasawa 2017 at University of Tokyo, Tokyo, Japan.
- 2019 12/16-18 Conference of 2019 International Consortium of Chinese Mathematicians Best Paper Award, Sanya, China.
- 2021 8/23-27 The 9th East Asia Number Theory Conference, online.
- 2022 12/28-30 The 10th(2022) NCTS-Postech-PMI Joint Workshop on Number Theory, NCTS, Taipei, Taiwan.
- 2023 7/17-21 Iwasawa Theory 2023: in memory of John Coates, University of Cambridge, Cambridge, UK.
- 2025 8/18-22 Arithmetic cycles, Modular forms, and L -functions, Montreal, Canada.
- 2026 1/21,22 TMS Annual Meeting, National Chung Cheng University, Chiayi, Taiwan.

Teaching Experience

Instructor

- 2007 Fall Abstract Algebra I, National Hsinchu University of Education.
- 2008 Spring Abstract Algebra II, National Hsinchu University of Education.
- 2010 Summer Elementary Calculus I&II, National Tsing Hua University.
- 2016 Fall Algebra I (graduate course), National Central University.
- 2017 Spring Algebra II (graduate course), National Central University.
- 2017 Fall Algebra I (graduate course), National Central University.
- 2018 Spring Algebra II (graduate course), National Central University.
- 2018 Fall Modern Algebra I (graduate course), National Tsing Hua University.
- 2018 Fall Local Theory of Representation on $GL(2)$, National Center for Theoretical Sciences.
- 2019 Spring Modern Algebra II (graduate course), National Tsing Hua University.
- 2019 Fall Algebraic Number Theory (graduate course), National Tsing Hua University.
- 2019 Fall On Topics of Drinfeld Modules and t-Motives, National Center for Theoretical Sciences.
- 2020 Spring Elementary Number Theory, National Tsing Hua University.
- 2020 Spring On Topics of Drinfeld Modules and t-Motives, National Center for Theoretical Sciences.
- 2020 Fall Calculus I, National Tsing Hua University.
- 2021 Spring Calculus II, National Tsing Hua University.
- 2021 Spring Elementary Number Theory, National Tsing Hua University.
- 2021 Fall Modern Algebra I (graduate course), National Tsing Hua University.
- 2021 Fall Topics on the arithmetic of modular forms (graduate course), National Tsing Hua University.
- 2022 Spring Modern Algebra II (graduate course), National Tsing Hua University.
- 2022 Fall Elementary Number Theory, National Tsing Hua University.
- 2022 Fall Modern Algebra I (graduate course), National Tsing Hua University.
- 2023 Spring Modern Algebra II (graduate course), National Tsing Hua University.
- 2023 Fall Linear Algebra I, National Tsing Hua University.
- 2023 Fall Topics on arithmetic of function fields, National Tsing Hua University.
- 2024 Spring Linear Algebra II, National Tsing Hua University.
- 2024 Fall Algebra I, National Tsing Hua University.
- 2025 Fall Modern Algebra I (graduate course), National Tsing Hua University.
- 2026 Spring Modern Algebra II (graduate course), National Tsing Hua University.
- 2026 Spring Elementary Number Theory, National Tsing Hua University.

Postdocs, Students and Assistants

Postdocs

- 2020 Sep - Andy Kong, National Tsing Hua University
2022 Aug
2022 Aug - Chien-Hua Chen, National Center for Theoretical Sciences
present

Ph. D. Students

- 2021 Aug - Ming-Ting Zhong, National Tsing Hua University
2022 Jul
2022 Aug - Guan-Ting Chen, National Tsing Hua University
present
2023 Aug - Ting-Wei Chang, National Tsing Hua University
present
2025 Aug - Jun-Hao Huang, National Tsing Hua University
present

Master Students

- 2016 Dec - Ying-Jung Chen, National Central University
2019 Jan
2019 Jan - Guan-Ting Chen, National Tsing Hua University
2021 Jan
2020 Jan - Tsi-Min Lin, National Tsing Hua University
2022 Jan
2020 Jan - Chu-Jun Dou, National Tsing Hua University
2022 Jan
2020 Dec - Wei-Chun Wang, National Tsing Hua University
2022 Jun
2020 Dec - Hong-Yi Wang, National Tsing Hua University
2022 Jul
2022 Aug - Ting-Wei Chang, National Tsing Hua University
2023 Jul
2023 Aug - Min-Yi Shen, National Tsing Hua University
2025 Jun
2024 Jan - Jun-Hao Huang, National Tsing Hua University
2025 Jul
2026 Jan - Ping-Chen Ke, National Tsing Hua University
present

Research Assistants

- 2020 Sep - Chih-Chiang Kao, National Center for Theoretical Sciences
2022 Mar
2022 Feb - Guan-Ting Chen, National Center for Theoretical Sciences
2022 Jul
2023 Feb - Hong-Yi Wang, National Center for Theoretical Sciences
2024 Feb

Computer skill

Mathematical software Mathematica, Magma, Sage