

Weichen Gu

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Education

University of New Hampshire

PHD MATHEMATICS

- Advisor: Dr. Liming Ge

NH, US

Sep. 2019 - present

Academy of Mathematics and Systems Science, CAS

MS MATHEMATICS

- Advisor: Dr. Xiaotao Sun

Beijing, China

Sep. 2014 - Jul. 2017

University of Science and Technology of China

BS MATHEMATICS AND APPLIED MATHEMATICS

Hefei, China

Sep. 2010 - Jul. 2014

Research Interests

Number Theory, Operator Algebra and Quantum information

Professional Experience

- 2023-2024 **Dissertation Year Fellowship, Summer TA Fellowship**, UNH
- 2019-2023 **Graduate Teaching Assistant**, Dept. of Mathematics and Statistics, UNH
- 2018-2019 **Research Scholar**, Harvard University
- 2016 **Graduate Teaching Assistant**, Dept. of Mathematics and Statistics, UCAS
- 2010-2012 **Summer Camp Instructor**, Jiaxing No.1 High School

Publications

PUBLISHED

- Bu K, **Gu W**, Jaffe A. Quantum Entropy and Central Limit Theorem[J]. Proceedings of the National Academy of Sciences, 2023, 120(25): e2304589120.
- Gu W**, Wei F. Möbius Disjointness for A Class of Exponential Functions[J]. The Quarterly Journal of Mathematics, 2022, 73(4): 1427-1468.
- Gu W**, Ma M, Shen J, Shi W. L^p -isometries of Grassmann Spaces in Factors of Type II [J]. Journal of Operator Theory, 2022, 87(2): 389-412.
- Bu K, **Gu W**, Jaffe A. Duality of Graph Invariants [J]. Science China Mathematics, 2020, 63(8): 1613-1626.
- Gu W**, Wu W, Yuan W. Transition Probability Preserving Maps on A Grassmann Space in a Semifinite factor [J]. Journal of Mathematical Analysis and Applications, 2020, 487(1): 123957.

IN REVIEW

- Bu K, **Gu W**, Jaffe A. 2023. Discrete Quantum Gaussians and Central Limit Theorem. arXiv preprint arXiv:2302.08423

Awards & Fellowships

- 2024 **Graduate Student Travel Grants**, JMM2024
- 2023 **Dissertation Year Fellowship**, UNH
- 2023 **Summer TA Fellowship**, UNH

2014-2017 **Graduate Fellowship**, AMSS
2014 **Hua Loo-Keng Talent Class Excellence Award**, USTC
2013 **Chinese Academy of Sciences Fellowship for Undergraduate Students**, UCAS
2010 **Special Graduate Entrance Fellowship**, USTC

Invited Talks

Spring 2024. *Quantum Convolution and Central Limit Theorem*. JMM 2024
Fall 2023. *Möbius disjointness for a class of exponential functions*. Number Theory Seminar, Brigham Young University.
Summer 2023. *Higher Ordered Quantum Fourier Analysis*. Mathematical Picture Language Project, Harvard.
Spring 2023. *On the zeta-function of some non-commutative semigroups*. Noncommutative Geometry Seminar, TAMU.
Winter 2021. *On Entropy of Arithmetic Functions*. Major Presentation, UNH
Fall 2021. *Property T and the Haagerup property of II_1 factors*. Minor Presentation, UNH
Summer 2019. *Duality of Graph Invariants*. Institute Talks, AMSS.
Fall 2018. *Arithmetic Compactification of Natural Numbers*. Mathematical Picture Language Project, Harvard.
Spring 2018. *Duality of Graph Invariants*. Conference on Number Theory and Dynamical Systems, USTC.

Teaching Experience

Spring 2023 **MATH 528 Multidimensional Calculus**, Teaching Assistant, UNH
Fall 2022 **MATH 426 Calculus II**, Teaching Assistant, UNH
Spring 2022 **MATH 528 Multidimensional Calculus**, Teaching Assistant, UNH
Fall 2021 **MATH 528 Multidimensional Calculus**, Teaching Assistant, UNH
Summer 2021 **MATH 528 SY Multidimensional Calculus**, Instructor, UNH
Spring 2021 **MATH 528 Multidimensional Calculus**, Teaching Assistant, UNH
Fall 2020 **MATH 527 Differential Equations/Linear Algebra**, Teaching Assistant, UNH
Spring 2020 **MATH 527 Differential Equations/Linear Algebra**, Teaching Assistant, UNH
Fall 2019 **MATH 527 Differential Equations/Linear Algebra**, Teaching Assistant, UNH
Fall 2016 **Linear Algebra**, Teaching Assistant, UCAS
Summer 2012 **Lectures on Number Theory**, Instructor, Jiaxing No.1 High School
Summer 2011 **Lectures on Inequality Method**, Instructor, Jiaxing No.1 High School
Summer 2010 **Lectures on Combination Proof**, Instructor, Jiaxing No.1 High School