Hong Chen

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Education

Rutgers, the State University of New Jersey   New Brunswick, NJ, US

Ph.D. in Mathematics   September 2020–present

  Advisor: Prof. Siddhartha Sahi

Beijing Normal University   Beijing, China

B.S. (with honors) in Mathematics   September 2016–June 2020

Awards and Fellowships

- School of Arts and Sciences Fellowship, Rutgers   Spring 2025
- Academic Excellence Awards, Math Department, Rutgers   Fall 2020
- Jingshi Scholarship, Beijing Normal University   2016–2020

Research Interests

Algebraic representation theory, symmetric functions and algebraic combinatorics, in particular, Schur, Jack and Macdonald polynomials.

Publications and Preprints

Publications

[1] H. Chen, J. Q. Ge, K. Jia, and Z. Q. Lu. "On a conjecture of Bahri-Xu". In: *Acta Math. Sin. (Engl. Ser.)* 37.11 (2021), pp. 1721–1742. URL: https://doi.org/10.1007/s10114-021-0027-0.

Preprints

[2] H. Chen and S. Sahi. *Interpolation Polynomials, Binomial Coefficients, and Symmetric Function Inequalities*. 2024. arXiv: 2403.02490 [math.CO].

Talks and Posters

Research Talks

- AMS Sectional Meeting, U Albany   October 2024
- Combinatorics Seminar, Center for Combinatorics, Nankai University   July 2024
- Algebra and Geometry Seminar, HKUST   May 2024

o Lie Group/Quantum Math Seminar, Rutgers | April 2024
o Randomness and Lie-theoretic Structures, U Virginia | March 2024

Seminar Talks

o Rutgers GARTS, *Representations of Symmetric Groups* | November 2024
o Rutgers GARTS, *Partitions and Symmetric Functions* | November 2024
o Rutgers GARTS, *Interpolation Jack and Macdonald Polynomials* | February 2024
o Rutgers GARTS, *Symmetric Functions and Characters of Symmetric Groups* | November 2023
o Rutgers GARTS, *A Brief Introduction to D-modules* | September 2022

Posters

o Mid-Atlantic Algebra, Geometry, and Combinatorics Workshop, George Washington U, | October 2024
o International Congress of Basic Science, BIMSA, China, | July 2022

Services

o September 2022–present, Rutgers, Graduate Algebra and Representation Theory Seminar (GARTS)

Teaching and Mentoring

Teaching Assistant at Rutgers

o Math 351: Introduction to Abstract Algebra I | Fall 2024
o Math 252: Elementary Differential Equations | Spring 2024
o Math 151: Calculus I | Fall 2023
o Math 111: Precalculus I | Spring 2023
o Math 152: Calculus II for the Mathematical and Physical Sciences | Fall 2022
o Math 250: Introductory Linear Algebra | Spring 2022
o Math 477: Mathematical Theory of Probability | Fall 2021

Direct Reading Program at Rutgers

o Kevin Guether, Symmetric functions | Fall 2024
o Emily Howlett, Symmetric functions and characters of symmetric groups | Fall 2023
o Emily Howlett, Representations of Lie groups and Lie algebras | Spring 2023

Skills

Programming: Maple, Matlab, LaTeX

Languages: Chinese (native), English (fluent)

Last updated: January 2025