

DAIN KIM

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EDUCATION

Massachusetts Institute of Technology (MIT)

Ph.D. Candidate in Mathematics

Thesis advisor : Bill Minicozzi

Cambridge, MA

2023-present

Massachusetts Institute of Technology (MIT)

B.S. in Mathematics and in Computer Science and Engineering

GPA – 5.0 / 5.0

Cambridge, MA

2019-2023

PUBLICATIONS

3. **Dain Kim** and Nicholas Wilkins. The \mathbb{Z}/p -equivariant cohomology of genus zero Deligne-Mumford space with $1 + p$ marked points, to appear in *Algebr. Geom. Topol.*
2. **Dain Kim**, Anqi Li, and Jonathan Tidor. Cubic Goldreich-Levin. *Proceedings of the 2023 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*
1. Julius Baldauf and **Dain Kim**. Parabolic Frequency on Ricci Flows. *International Mathematics Research Notices*, 2022.

HONORS AND AWARDS

William Putnam Competition 2021 - rank 6th, Elizabeth Lowell Putnam Prize; 2019 - N2

Rogers Prize *MIT Math Department*

For the best paper and presentation in MIT Math Department's Summer Program in Undergraduate Research.

International Mathematical Olympiad (IMO) 2017, 2018 - Gold Medals

TALKS

The Moduli space of ASD Yang–Mills connections, MIT GA Student Seminar, MIT, 2025

Almost rigidity of warped product spaces, MIT GA Student Seminar, MIT, 2024

Uniqueness of Regular Tangent Cones for Immersed Stable Hypersurfaces, MIT GA Student Seminar, MIT, 2024

Application of Stern's Bochner formula to stable Bernstein Problem in \mathbb{R}^4 , MIT GA Student Seminar, MIT, 2023

Future Completion, Space of Metric Flow Pairs, and Compactness of Ricci Flows, MIT GA Student Seminar, MIT, 2022

Failure of Bernstein Theorem in higher dimensions, Undergraduate Geometry Seminar Presentation, MIT, 2022

Level set approach to Mean Curvature Flow, UChicago REU Presentation, University of Chicago, 2022

Introduction to Hodge Theory, UChicago REU sheaf reading seminar, 2022

Theorem of the fixed part and rigidity theorem, Topics in Hodge Theory class talk, Harvard, 2022

Hodge Decomposition and Hodge-de Rham Spectral Sequence, MIT DRP presentation, MIT, 2022

Optimal Transportation on Ricci Flows, Undergraduate Analysis Seminar Presentation, MIT, 2021

Cubic Goldreich-Levin, MIT SPUR research presentation, MIT, 2021

ATTENDED SEMINARS AND CONFERENCES

Southern California Geometric Analysis Seminar <i>UC Irvine</i>	Feb 2025
The 20th KIAS Winter School on Geometry <i>KIAS, Korea</i>	Jan 2025
Geometry and analysis of special structures on manifolds <i>SLMath</i>	Nov 2024
Recent progress on geometric analysis and Riemannian geometry <i>SLMath</i>	Oct 2024
CHANGE: Challenges in Analysis and Geometry <i>ETH Zurich, Switzerland</i>	Jun 2024
Frontiers of Geometric Analysis <i>UCSC and U.Iowa</i>	Jun 2024
From Microlocal to Global Analysis <i>MIT</i>	May 2024
Southern California Geometric Analysis Seminar <i>UCSD</i>	Apr 2024
The Fifth Taiwan International Conference on Geometry <i>NCTS, Taiwan</i>	Jan 2024
Brown–MIT joint Geometric Analysis Seminar <i>Brown</i>	Oct 2023
Geometry and Analysis Seminar for Boston Area Graduate Students <i>MIT</i>	Oct 2022
Geometry and Analysis Seminar for Boston Area Graduate Students <i>MIT</i>	Oct 2021

ACADEMIC SERVICE

Organizer - PuMaGraSS: Pure Math Graduate Student Seminar Cambridge, MA
MIT Math Department 2024-2025

TEACHING AND MENTORING EXPERIENCE

Grader - Combinatorial Analysis Cambridge, MA
MIT Math Department Fall 2024

Mentor - GUMMI: Graduate-Undergraduate Math Mentor Initiative Cambridge, MA
MIT Math Department 2024

Undergraduate Assistant - Putnam Seminar Cambridge, MA
MIT Math Department 2020, 2021, 2022

Teaching Assistant - Korean Mathematical Olympiad Summer and Winter Camp Korea
Korean Mathematical Society 2019, 2020, 2021

Teaching Assistant - Korean IMO team training Seoul, Korea
Korean Mathematical Society 2019, 2020, 2021