Joonhee Kim

Contact Information

School of Mathematics
Korea Institute for Advanced Study
85 Hoegiro Dongdaemun-gu, Seoul 02455, South Korea
Office : 1515
E-mail : kimjoonhee@kias.re.kr
Homepage : https://kim-joonhee.github.io/

Positions

Research fellow — Mar 2023 -
Korea Institute for Advanced Study

Academic research professor — Mar 2022 - Feb 2022
Yonsei University

Postdoctoral researcher — Mar 2021 - Feb 2022
Yonsei University

Education

Ph.D. in Mathematics — Feb 2021
Yonsei University
Advisor : Byunghan Kim
Thesis : On the Hierarchy between SOP_1 and SOP_2

B.A. in Psychology, B.S. in Mathematics, B.A. in Philosophy — Feb 2013
Yonsei University

Research interests

- Model Theory
- Classification Theory

Papers (in order of announcement)

- n-variable theorems for dividing lines characterized by positive consistency-inconsistency configurations, and their applications to preservation problems, submitted, arXiv:2609.36394.
- Mekler's construction and the preservation of NCTP and NBTP (with JinHoo Ahn), submitted, arXiv:2602.22966.
- Existence in NSOP_1 theories (with Byunghan Kim and Hyoyoon Lee), *The Journal of Symbolic Logic*, First View (2025), 1–15, arXiv:2405.13741.
- Some remarks on Kim-dividing in NATP theories (with Hyoyoon Lee), *The Journal of Symbolic Logic* **91** (2026), no. 1, 105–128, arXiv:2211.04213.
- Preservation of NATP (with JinHoo Ahn, Hyoyoon Lee, and Junguk Lee), *Journal of Mathematical Logic* **25** (2025), no. 1, 2450012, arXiv:2209.08753.
- On the antichain tree property (with JinHoo Ahn and Junguk Lee), *Journal of Mathematical Logic* **23** (2023), no. 2, 2250021, arXiv:2106.03779.
- SOP_1, SOP_2, and antichain tree property (with JinHoo Ahn), *Annals of Pure and Applied Logic* **175** (2024), no. 3, 103402, arXiv:2003.10030.

Talks

- n-variable theorem and its applications to preservation problems, PKU model theory (and friends) seminar, Peking University, October 15, 2026
- n-variable theorems for dividing lines characterized by positive consistency-inconsistency configurations, New Forking Festival, University of Notre Dame, July 30, 2026

- n-variable theorems for positive consistency-inconsistency configurations and their applications to preservation problems, BLAST 2026, Baylor University, May 20, 2026
- Forking, Dividing, Morley Sequences, and Independence Notions in Model Theory, 2026 Winter Model Theory Workshop, UNIST, February 4, 2026
- n-variable theorems of NCTP, NBTP, and NSOP_3, Hebrew University Logic Seminar (online), January 21, 2026
- A characterization of treeless theories using collapsing indiscernibles, RIMS Model Theory Workshop, Kyoto University, December 9, 2025
- Existence of Kim-independence in NSOP_1 theories over sets, Chinese Annual Conference on Mathematical Logic 2024, Peking University, October 27, 2024
- Existence of pre-independence relations induced by Morley sequences, KMS Spring Meeting 2024, Daejeon Convention Center, April 19, 2024
- Defining smallness and independence in arbitrary mathematical structures from a model-theoretic perspective, Rookies Pitch, Seoul National University, April 16, 2024
- Pre-independence relations induced by Morley sequences in NSOP_1 theories, Korea Logic Day 2024, Online, Jan 12, 2024
- Existence axiom of pre-independence relations in NSOP_1 theories, RIMS Model Theory Workshop, Kyoto University, December 5, 2023
- Kim-dividing in NATP Theories, 17th Asian Logic Conference, Nankai University, October 9, 2023
- Pre-independence Relations and Forking in Classification Theory, KIAS, May 11, 2023
- Dense/Codense expansions on vector spaces, KMS Fall Meeting 2022, Online, October 19, 2022
- Kim-Forking and Kim-Dividing in NATP Theories, RIMS Model Theory Workshop 2021, Online, Dec 14, 2021
- One-variable theorem for the localized ATP, KMS Fall Meeting 2021, Online, October 19, 2021
- One-variable theorem for antichain tree property, Korea Logic Day 2021, Online, Jan 14, 2021
- Some remarks on model theoretic tree properties, RIMS Model Theory Workshop 2020, Online, Dec 8, 2020
- Antichain tree property and 1-strict strong order property, KMS Spring Meeting 2020, Online, July 3, 2020
- Existence of antichain trees in SOP_1-NSOP_2 theories, KAML Winter Meeting 2019, Yonsei University, Dec 20, 2019
- Tree-indiscernibility in SOP_1 and antichain trees, RIMS Model Theory Workshop 2019, Kyoto University, Dec 3, 2019

Poster Presentation

- On the Antichain Tree Property, Workshop: Practical and Structural Model Theory, Leeds University, July 25-29, 2022

Service

Refereeing

- Journal of Mathematical Logic
- Notre Dame Journal of Formal Logic

Organizing Committee Participation

- Special Session “Recent Research in Model Theory in Korea”, International Conference Celebrating the 80th Anniversary of the Korean Mathematical Society, Seoul, South Korea, June 25, 2026.

- Mathematical Logic Special Session at the 2025 KMS Annual Meeting, Seoul, South Korea, Oct 22, 2025
- Korea Logic Day 2025, Changwon, South Korea, Jan 13–15, 2025
- Korea Logic Day 2024, Online, Jan 14, 2024
- Model Theory Conference in Seoul, Yonsei University (joint with Korea Institute for Advanced Study), 2023
- Korea Logic Day 2022, Online, Jan 14, 2022
- Korea Logic Day 2021, Online, Jan 14, 2021

Teaching Experience (Yonsei University)

Instructor

- Mathematics for Economics (2020 Fall – 2022 Fall)
- Calculus (2021 Spring, 2022 Spring)
- Real Analysis (2021 Fall, 2022 Fall)
- Engineering Mathematics (2018 Spring, 2018 Summer)

Teaching Assistant

- Set Theory (2016 Spring, 2017 Spring, 2020 Spring)
- Mathematical Logic (2016 Spring, 2017 Fall, 2019 Fall)
- Model Theory (2017 Spring)
- Algebra (2014 Fall, 2015 Spring, 2019 Fall)
- Algebraic Topology (2015 Fall, 2017 Fall, 2018 Fall)
- Calculus, Engineering Mathematics (2013 Fall – 2017 Spring)