Curriculum Vitae[1]
Keisuke Hoshino

Contact details

Division of Mathematics and Mathematical Sciences, Faculty of Science, Kyoto University,
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Fundings

2023–2026 JSPS Research Fellowship for Young Scientists (DC1)

Education

2023– Ph.D. course in Division of Mathematics and Mathematical Sciences, Faculty of Science, Kyoto University.

Expected completion : March 2026

Thesis title : *A Homotopy Theory of Algebraic Higher Categories*

Supervisor : Masahito Hasegawa

2021–2023 Master's course in Division of Mathematics and Mathematical Sciences, Faculty of Science, Kyoto University.

Thesis title : *Towards structures of higher dimensional categories*

Supervisor : Masahito Hasegawa

2017–2021 Undergraduate course in Faculty of Science, Kyoto University.

Publications

[1] S. Fujii, K. Hoshino, and Y. Maehara. "ω-weak equivalences between weak ω-categories". In: *Adv. Math.* 480 (2025), Paper No. 110490. ISSN: 0001-8708,1090-2082. DOI: 10.1016/j.aim.2025.110490. URL: https://doi.org/10.1016/j.aim.2025.110490.

[2] K. Hoshino and H. Nasu. "Double categories of relations relative to factorisation systems". In: *Appl. Categ. Structures* 33.2 (2025), Paper No. 11, 70. ISSN: 0927-2852,1572-9095. DOI: 10.1007/s10485-025-09799-y. URL: https://doi.org/10.1007/s10485-025-09799-y.

[3] S. Fujii, K. Hoshino, and Y. Maehara. "Weakly invertible cells in a weak ω-category". In: *High. Struct.* 8.2 (2024), pp. 386–415. ISSN: 2209-0606. DOI: 10.21136/HS.2024.14.

Preprints

[1] S. Fujii, K. Hoshino, and Y. Maehara. *ω-equifibrations between strict and weak ω-categories*. 2025. arXiv: 2511.09849 [math.CT].

Talks

(Invited)

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[1]Last updated: December 5, 2025

[1] K. Hoshino and H. Nasu. *Double categories of relations relative to factorisation systems.* Second Virtual Workshop on Double Categories, Online. Oct. 2024.

(non-refereed)

[1] K. Hoshino. *Bivirtual double categories and localisation of composing cells.* Computer Science and Category Theory (CSCAT2025), Kumamoto, Japan. Mar. 2025.

[2] K. Hoshino. *Towards Structres of Higher Dimensional Cagegorical Structures.* Computer Science and Category Theory (CSCAT2023), Kyoto, Japan. Mar. 2023.

[3] K. Hoshino and H. Nasu. *Double categories of relations relative to factorisation systems.* 67th Annual Meeting of the Australian Mathematical Society (AustMS 2023), Brisbane, Australia. Dec. 2023.

[4] K. Hoshino. *PCAs as algebras over operads.* Computer Science and Category Theory (CSCAT2022), Online. Mar. 2022.

Teaching experiences

2021 Teaching assistant in Faculty of Science, Kyoto University. Tutor for KTGU Faculty Seminar (KTGU 学部セミナー) reading *Introduction to the Theory of Computation* by Sipser, Michael.

2022 Teaching assistant in Faculty of Science, Kyoto University. Tutor for KTGU Faculty Seminar (KTGU 学部セミナー) reading プログラム意味論 *(Program Semantics)* by Yokouchi, Hirofumi.