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Education

Tokyo Institute of Technology

Master of Science in Mathematics

Supervisor: Kazuma Shimomoto (2nd year), Fumiharu Kato (1st year)

Tokyo, Japan

Apr 2022–Current

Tokyo Institute of Technology

Bachelor of Science in Mathematics

Supervisor: Fumiharu Kato

Tokyo, Japan

Apr 2018–Mar 2022

Research Interests

Commutative algebra in mixed characteristic (via arithmetic methods such as perfectoid rings, prismatic cohomologies, and almost mathematics).

Preprints

- [3] D.Dine and **R.Ishizuka**. *Tilting and untilting for ideals in perfectoid rings*. arXiv:2308.09600.
- [2] **R.Ishizuka**. *A calculation of the perfectoidization of semiperfectoid rings*. arXiv:2305.07916.
- [1] **R.Ishizuka** and K.Shimomoto. *A mixed characteristic analogue of the perfection of rings and its almost Cohen-Macaulay property*. arXiv:2303.13872.

Talks

- Dec 2023. “Commutative ring theoretic approach for the perfectoidization of semiperfectoid rings”, Number Theory Seminar, Kyoto University, Japan
- Nov 2023. “Ideal correspondence between a perfectoid ring and its tilt”, The 44th Japan Symposium on Commutative Algebra, Lectore Hayama, Japan
- Aug 2023. “Absolute integral closure”, The 18th Summer School on Commutative algebra, Tokyo Institute of Technology, Japan
- Aug 2023. “On the relation between perfectoidization and p -root closure”, The 9th China-Japan-Korea International Conference on Ring and Module Theory, Incheon National University, Republic of Korea
- July 2023. *On the commutative ring-theoretic structure of the perfectoidization of semiperfectoid rings*, The 22nd Hiroshima-Sendai Workshop on Number Theory at Hiroshima, Hiroshima University, Japan
- July 2023. “On the application of perfectoidization to commutative algebra and its structure”, The 34th Seminar on Commutative Algebra in Japan, Kitami Institute of Technology, Japan
- May 2023. “On Perfectoid(ization) and its commutative ring-theoretic properties”, Ookayama Algebra Seminar for Young Researchers, Tokyo Institute of Technology, Japan
- Mar 2023. “A mixed characteristic analogue of the perfection of rings”, The 11th Japan-Vietnam Joint Seminar on Commutative Algebra - by and for young mathematicians -, Vietnam Academy of Science and Technology, Vietnam
- Mar 2023. “An explicit construction of perfectoid almost Cohen-Macaulay algebras in mixed characteristic”, MSJ Spring Meeting 2023, Chuo University, Japan
- Mar 2023. “An explicit construction of perfectoid almost Cohen-Macaulay algebras”, The 19th Mathematics Conference for Young Researchers, Hokkaido University, Japan

- Oct 2022. *“An explicit construction of perfectoid almost Cohen-Macaulay algebras in mixed characteristic”*, The 43rd Japan Symposium on Commutative Algebra, Osaka University, Japan

Membership

- Apr 2023– . Mathematical Society in Japan (MSJ)

Languages

Japanese: Native

Mother tongue

English: Intermediate

Can read, write, and, listen but may struggle with conversation

French: Beginner

Can only read mathematical texts