Ryo ISHIZUKA | 石塚 伶

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Education

Tokyo Institute of Technology **Tokyo, Japan**
Doctor of Science in Mathematics *Apr 2024–Current*
Supervisor: Kazuma Shimomoto

Tokyo Institute of Technology **Tokyo, Japan**
Master of Science in Mathematics *Apr 2022–Mar 2024*
Supervisor: Kazuma Shimomoto (2nd year), Fumiharu Kato (1st year)

Tokyo Institute of Technology **Tokyo, Japan**
Bachelor of Science in Mathematics *Apr 2018–Mar 2022*
Supervisor: Fumiharu Kato

Professional Position

JSPS Research Fellow (DC1) **Apr 2024–Mar 2027**
Tokyo Institute of Technology
Host Researcher: Kazuma Shimomoto

Research Interests

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

Papers and Preprints

[4] **R.Ishizuka** and K.Nakazato. *Prismatic Kunz's theorem*. arXiv: 2402.06207.

[3] D.Dine and **R.Ishizuka**. *Tilting and untilting for ideals in perfectoid rings*. arXiv: 2308.0960.

[2] **R.Ishizuka**. *A calculation of the perfectoidization of semiperfectoid rings*. Nagoya Math. J. (2024). 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

- Mar 2024. *"Perfectoid ideals and its correspondence"*, The 20th Mathematics Conference for Young Researchers, Hokkaido University, Japan
- Feb 2024. *"Mixed characteristic Kunz's theorem with prismatic theory"*, The 28th Conference on Algebra for Young Researchers in Japan, Waseda University, Japan
- 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 Youth Seminar in Algebra, 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 tangue*

English: Intermediate — *Can read, write, and, listen but may struggle with conversation*

French: Beginner — *Can only read mathematical texts*