

RYOSUKE SHIMIZU

Faculty of Science and Engineering, Waseda University

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Education

Ph.D. in Informatics, Kyoto University. (Supervisor: Jun Kigami)	Apr. 2020—Sep. 2022
MInf , Kyoto University. (Supervisor: Jun Kigami)	Apr. 2018—Mar. 2020
B.Sc. , Faculty of Science, Kyoto University.	Apr. 2014—Mar. 2018

Employment

Junior Researcher, Waseda University	Oct. 2023—Present
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Fellowship

JSPS Research Fellow (PD) for Young Scientists , Waseda University	Apr. 2023—Present
JSPS Research Fellow (PD) for Young Scientists* , Kyoto University	Sep. 2022—Mar. 2023
JSPS Research Fellow (DC1) for Young Scientists , Kyoto University	April 2020—Sep. 2022

Publications and Preprints

- (with Naotaka Kajino) *p*-Energy forms on fractals: recent progress, preprint; submitted.
- (with Mathav Murugan) *First-order Sobolev spaces, self-similar energies and energy measures on the Sierpiński carpet*, preprint; a shorter version is submitted.
- *Construction of p -energy and associated energy measures on Sierpiński carpets*, Trans. Amer. Math. Soc. **377** (2024), no.2, 951–1032.
- *Parabolic index of an infinite graph and Ahlfors regular conformal dimension of a self-similar set*, in **Analysis and Partial Differential Equations on Manifolds, Fractals and Graphs**, edited by Alexander Grigor'yan and Yuhua Sun, Berlin, Boston: De Gruyter, 2021, pp. 201–274.

Selected Talks

- *Construction of first-order Sobolev spaces on the planar Sierpiński carpet* (short talk), Random Interacting Systems, Scaling Limits, and Universality (Week 1), National University of Singapore, Singapore, Singapore, December 6, 2023.
- *Construction of a canonical p -energy on the Sierpiński carpet for all $p > 1$* , Geometric and Stochastic analysis on metric spaces, Kyoto University, Kyoto, Japan, March 13, 2023.
- *Nonlinear potential theory on the Sierpiński carpet* (25 minutes talk), Analysis and geometry of fractals and metric spaces: Recent developments and future prospects, Bankoku Shinryokan, Okinawa, Japan, March 9, 2023.
- *Construction of a canonical p -energy on the Sierpiński carpet* (short talk), Smooth Functions on Rough Spaces and Fractals with Connections to Curvature Functional Inequalities, Banff International Research Station, Banff,

*The category was changed from (DC1) because I obtained the doctoral degree.

Canada, November 24, 2022.

- *Construction of a canonical p -energy on the Sierpiński carpet* (contributed talk), PIMS-CRM Summer School in Probability 2022, University of British Columbia, Vancouver, Canada, June 9, 2022.
- *Construction of a canonical p -energy on the Sierpiński carpet* (short talk via Zoom), Analysis on Metric Spaces Workshop 2022, OIST & zoom, Okinawa, Japan, May 27, 2022.
- *Construction of a canonical p -energy on the Sierpiński carpet*, Quasiworld, UCLA (zoom), October 20, 2021.
- *Generalized resistance metrics on graphs* (30 minutes talk), Kobe Workshop on Probabilistic Potential Theory and Related Fields, Kobe, Japan, May 7, 2019.