

Seung uk Jang

Contact Details

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Employment

2023– **Post-doc**, *Université de Rennes, Rennes, France.*
UMR CNRS 6625, Groups of Algebraic Transformations (GOAT)
Mentor: Serge Cantat

Education

2014–2023 **Ph.D of Math**, *University of Chicago, Chicago, IL, USA.*
Mathematics
Advisors: Simion Fllip; Alex Eskin
Thesis: Hyperkähler Kummer Rigidity and the Vieta Involutions on Tropical Markov Cubics
2021 **Master of Science**, *University of Chicago, Chicago, IL, USA.*
Mathematics
2013–2014 **Master of Science**, *KAIST, Daejeon, South Korea.*
Mathematical Sciences
2009–2013 **Bachelor of Science**, *KAIST, Daejeon, South Korea.*
Mathematical Sciences, with minor on Computer Science

Research Interests

Algebraic and Complex Dynamical Systems; Ergodic theory; Non-archimedean Analysis

Preprints

2025 **Residual Transitivity implies Minimality for Markoff Surfaces over p -adic Integers, by Means of p -adic Flows**, *Seung uk Jang.*
available as a preprint in [hal-04966596](#)
2023 **Vieta Involutions on Tropical Markov Cubics**, *Seung uk Jang.*
available as a preprint in [arXiv:2306.11357](#)

Publications

- 2024 **Orbits of Automorphism Groups of Affine Surfaces over p -adic Fields**, *Serge Cantat and Seung uk Jang*.
To appear in Ann. Inst. Fourier
- 2024 **Kummer Rigidity for Hyperkähler Automorphisms**, *Seung uk Jang*.
J. Mod. Dyn. **20**, pp. 183–213.
<https://doi.org/10.3934/jmd.2024005>
- 2018 **Quantum unique ergodicity and the number of nodal domains of eigenfunctions**, *Seung uk Jang and Junehyuk Jung*.
J. Amer. Math. Soc. **31**, no. 2, pp. 303–318.
<http://dx.doi.org/10.1090/jams/883>

Academic Talks

- 2024 **Markoff Surfaces in the p -adic World**, *Workshop: Group Actions with Hyperbolicity and Measure Rigidity*.
- 2024 **Lightening talk, 5-min. presentations**, *CIRM Research School 2968 Group Actions and Rigidity: Around the Zimmer Program*.
- 2023 **Vieta Involutions on Tropical Markov Cubics**, *Poster session, CIRM Research School 2794 Renormalization and Visualization for packing, billiard, and surfaces*.
- 2023 **Do Tropical Markov Cubics dream of Hyperbolic Origami?**, *KAIST, Daejeon, South Korea*.
Talks based on the work *Vieta Involutions on Tropical Markov Cubics*, through various approaches including number theory, geometric topology, and dynamical systems.
- 2022 **Kummer Rigidity for Hyperbolic Hyperkähler Automorphisms**, *BiSTRO mini conference (on-line)*.
- 2022 **Currents and Plurisubharmonic Potentials**, *IUPUI*.
Presented in learning talks of 2022 Several Complex Dynamics School
- 2022 **Discovering a nontriviality of the δ - ϵ definition, in a math way**, *University of Chicago*.
UChicago Pedagogy Seminar, Dept. of Math
- 2021 **Kummer Rigidity for Hyperbolic Hyperkaehler Automorphisms**, *University of Chicago*.
UChicago Dynamics Seminar
- 2019 **A Mechanical model for Lorenz System**, *KIAS*.
introductory material for the Lorenz system and its analysis
- 2015 **Quantum ergodicity and the number of nodal domains of eigenfunctions**, *SNU*.
work done with Junehyuk Jung
- 2009 **Lattice Edge Number of Figure Eight Knot**, *2009 KMS-AMS Joint Meeting*, poster session.
work done with Hun Kim, Gyo Taek Jin, Choon Bae Jeon, Sang Hyuk Moon, Sang Hyun Park, Yoo Shin Song
- 2007 **Generalizing 2D Geometric Properties to 3D With the Aid of DGS**, *ATCM 2007*, contributed talks.
work done with Dohyun KIM, Hyobin LEE, Youngdae KIM



Experience

Teaching

Fall 2019 – **Lecturer**, *University of Chicago*, Chicago.

Fall 2022 Graduate Student Lecturer for various courses, in:

- Frechman Calculus course (Math 151-153): Fall 2019 – Spring 2020, Fall 2020 – Winter 2021 (Remote), Fall 2021 – Winter 2022
- Linear algebra (Math 196): Fall 2022
- *Mathematical Methods for Social Sciences* (Math 195): Spring 2021

Other Employments

Fall 2016 – **Researcher**, *NIMS*, Daejeon.

Summer 2019 Center for Applications of Mathematical Principles

Employment as an Alternative military service for Korea

Working on public understanding of (industrial) mathematics in Korea, including

- public lectures, generally towards 7th-12th grades students,
- running and maintaining IMAGINARY exhibitions in Korea, and
- exploring and developing new items in mathematics that can appeal to general public.