

GEFEI CAI

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*Beijing International Center for Mathematical Research, Peking University,
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EDUCATION

Peking University Graduate, Probability and Mathematical Statistics	Sept. 2022 - Present Advisor: Xinyi Li
Peking University Under Graduate, Mathematics and Applied Mathematics	Sept. 2019 - June 2022

AWARDS AND HONORS

First Prize Scholarship	Peking University, 2020
Honor of Merit Student	Peking University, 2020
Excellent Graduate	Peking University, 2022
President Scholarship	Peking University, 2022

RESEARCH

Research Interests

Probability theory and mathematical physics, in particular Brownian motion, Schramm-Loewner evolutions, statistical mechanics and conformal field theory.

Publications

- **Gefei Cai**, Haoyu Liu, Baojun Wu, and Zijie Zhuang. Three-point connectivity constant for q -state Potts spin clusters. *Arxiv e-print arXiv:2510.05850*.
- **Gefei Cai**, Xuesong Fu, Xin Sun, and Zhuoyan Xie. Disconnection probability of Brownian motion on an annulus. *Arxiv e-print arXiv:2509.14073*.
- **Gefei Cai** and Yifan Gao. Uniqueness of generalized conformal restriction measures and Malliavin-Kontsevich-Suhov measures for $c \in (0, 1]$. *Arxiv e-print arXiv:2502.05890*.
- **Gefei Cai**, Wen-Bo Li, and Tim Mesikepp. Quasisymmetric geometry of low-dimensional random spaces. *Arxiv e-print arXiv:2412.06366*.
- Morris Ang, **Gefei Cai**, Xin Sun, and Baojun Wu. Integrability of Conformal Loop Ensemble: Imaginary DOZZ and Beyond. *Arxiv e-print arXiv:2107.01788v3*.
- Morris Ang, **Gefei Cai**, Xin Sun, and Baojun Wu. SLE Loop Measure and Liouville Quantum Gravity. *Arxiv e-print arXiv:2409.16547*.
- **Gefei Cai** and Xinyi Li. On Natural Measures of SLE- and CLE-Related Random Fractals. *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques*, 60(4), 2297-2327, Nov. 2024.