

Shalin Parekh

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1 Education

- PhD, Columbia University, 2022 (advisor Ivan Corwin).
- B.S. in Mathematics, Stony Brook University, May 2015

2 Academic Interests

Probability Theory and Stochastic Analysis

- Singular stochastic PDEs, Interacting particle systems, Random walks in random environments, Ergodic theory of Markov processes, Functional and Wiener space analysis

3 Publications and preprints

- *The KPZ limit of ASEP with boundary*. Communications in Mathematical Physics. 2019.
- *Positive random walks and an identity for half space SPDEs*. Electronic Journal Probab. 2022.
- *Limit Shape of Subpartition Maximizing Partitions*. Joint work with Ivan Corwin. Journal of Statistical Physics. 2020.
- *Convergence of ASEP to KPZ with basic coupling of the dynamics*. Stoch. Proc. Appl. 2022.
- *Ergodicity results for the open KPZ equation*. To appear in Ann. Inst. H. Poincare. 2024.
- *KPZ equation Limit of Sticky Brownian motion*. Joint work with Sayan Das and Hindy Drillick. arXiv 2304.14279
- *A nonlinear Strassen Law for singular SPDEs*. arXiv 2307.10889
- *KPZ equation limit of random walks in random environments*. Joint work with Sayan Das and Hindy Drillick. arXiv 2311.09151.
- *Invariance principle for the KPZ equation arising in stochastic flows of kernels*. arXiv 2401.06073.

4 Talks

- *Anomalous fluctuations in RWRE*. MIT Probability Seminar. April 2024.
- *Anomalous fluctuations in RWRE*. University of Chicago Probability seminar. April 2024.
- *Extreme value theory of sticky random walks*. Boston University probability talk. Jan 2024.
- *KPZ Limit of random walk in random environment*. University of Toronto Probability seminar. Oct. 2023.
- *Singular SPDEs and Strassen's Law*. Frontiers in Stochastic Analysis Conference at University of Illinois Chicago. August 2023.
- *KPZ limit of sticky Brownian motion*. UNC Chapel Hill, IDEAS Seimnar. October 2022.
- Minicourse on interacting particles and SPDEs. MSRI, Sep. 2021.
- *Strongly mixing operators and Strassen's Law*. Columbia-Princeton Probability day. May 2021.
- *Directed Landscape Part I*. MIT Seminar from a Safe Distance. Sep. 2020.
- *Extracting KPZ Statistics from Half-Space limits of ASEP and polymers*. UVA Integrable Probability Summer School. June 2019.
- *Brownian Meanders in Directed Polymers*. Austin-TAMU Probability Day. March 2019.

5 Teaching Experience

As Instructor:

- Probability theory (Spring and Fall 2023, UMD)
- Calculus II (Fall 2023 and Spring 2024, UMD)
- Calculus I (Summer 2021, Columbia)
- A second course in linear algebra (Fall 2022, UMD)
- Pre-calculus (Spring 2021, Columbia)

As Teaching Assistant: Fourier Analysis, ODEs, PDEs, Cryptography, Probability theory, Calculus III (various semesters, Columbia University and Stony Brook University)

6 Awards

- Edward Prince Goldman Scholarship in Science Award 2019 (Columbia University and New York Community Trust); Amount: \$5000
- Graduate Student Teaching award 2021. Columbia University

7 Service

Outreach: Directed Reading Program, two semesters at Columbia University.

Organization: Co-organizer of UMD Probability seminar Fall 2022-present (with many others);
Co-organizer of Brin Center SPDE conference at Maryland in Nov 2022 (with Sandra Cerrai and Yu Gu)

Refereeing: Ann. Probab.; J. Funct. Anal.; Electron. J. Probab.; J. Stat. Phys.; Ann. Inst. H. Poincare.

Dated : January 31, 2024