京都大学数理解析研究所，共同研究事業（公開型）

偏微分方程式と確率過程に現れる均質化理論
Homogenization in PDE and Stochastic Processes

Location: Room 111 (RIMS, Kyoto University)
Period: August 24 (Mon)–August 26 (Wed), 2026
Organizers: David Croydon (RIMS)
Takashi Kumagai (Waseda Univ)
Hiroyoshi Mitake (Waseda Univ)

Program

- **August 24 (Mon)**

9:30–10:10	Zhen-Qing Chen (University of Washington) Quantitative Homogenization of PDEs with Neumann boundary conditions: a probabilistic approach
10:20–11:00	Elena Kosygina (Baruch College) Stochastic homogenization of viscous Hamilton-Jacobi equations in 1d: open problems
11:00–11:30	Coffee Break
11:30–12:10	Xiaoqin Guo (University of Cincinnati) Quantification of ergodicity for Hamilton–Jacobi equations in a dynamic random environment
	Lunch Break
14:00–14:40	Tianling Jin (Hong Kong University of Science and Technology) A Liouville theorem for convex functions with periodic Monge-Ampere measure
14:50–15:30	Son Tu (Baylor University) Birkhoff Average Estimates and Applications to Quasi-Periodic Homogenization
15:30–16:00	Coffee Break
16:00–16:40	Rong Lei (Tohoku University) Emergence of an unsaturated Darcy-type law and a Richards-type equation via homogenization of a Stokes–Cahn–Hilliard system

- **August 25 (Tue)**

9:30–10:10	Alessandra Faggionato (Sapienza University of Rome) Equilibrium Fluctuations of the SSEP on Random Graphs with Conductances
10:20-11:00	Ryoki Fukushima (University of Tsukuba) Quenched moderate deviations for random walk in random scenery
11:00–11:30	Coffee Break
11:30–12:10	Chenlin Gu (Tsinghua University) Scaling limit of additive functionals for reversible non-gradient exclusion process: critical cases
	Lunch Break
14:00–14:40	Mitsuo Higaki (Kobe University) Navier's wall law for viscous flows in randomly rough domains
14:50–15:30	Panrui Ni (Waseda University) Quantitative homogenization of first-order ODEs
15:30–16:00	Coffee Break
16:00–16:40	Satomi Watanabe (Kyoto University) TBD

- **August 26(Wed)**

10:00–10:40	Sebastian Andres (Technische Universität Braunschweig) Anchored Nash inequalities and heat kernel bounds for random conductance models with long-range jumps
10:40–11:00	Coffee Break
11:00–11:40	Takuya Sato (University of Tokyo) Quantitative homogenization for obstacle problems of convex Hamilton-Jacobi equations
	Lunch Break
13:00–13:40	Kohei Hayashi (University of Osaka) Fluctuating hydrodynamics for a chain of nonlinear stochastic oscillators
13:50–14:30	Goro Akagi (Tohoku University) Optimal rate of convergence to some degenerate asymptotic profiles for fast diffusion

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