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# Quenched invariance principle for random walks among random conductances with stable-like jumps

Takashi Kumagai *

kumagai@kurims.kyoto-u.ac.jp

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Consider random conductances that allow long range jumps. In particular we consider conductances $C_{xy} = w_{xy}|x-y|^{-d-\alpha}$ for distinct $x, y \in Z^d$ and $0 < \alpha < 2$, where $\{w_{xy} = w_{yx} : x, y \in Z^d\}$ are positive independent random variables with mean 1. We prove that under some moment conditions for $w$, suitably rescaled Markov chains among the random conductances converge to a rotationally symmetric $\alpha$-stable process almost surely w.r.t. the randomness of the environments. The proof is a combination of analytic and probabilistic methods based on the recently established de Giorgi-Nash-Moser theory for processes with long range jumps.

*This is a joint work with Xin Chen (Shanghai) and Jian Wang (Fuzhou).*

*Research Institute for Mathematical Sciences, Kyoto University, Kitashirakawa, Sakyo-ku. Kyoto 606-8502, JAPAN