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Symmetric random walks in random environments.


Authors’ summary: “We consider a random walk on the $d$-dimensional lattice $\mathbb{Z}^d$, where the transition probabilities $p(x, y)$ are symmetric (i.e., $p(x, y) = p(y, x)$), different from zero only if $y - x$ belongs to a finite symmetric set including the origin, and are random. We prove the convergence of the finite-dimensional probability distributions of normalized random paths to the finite-dimensional probability distributions of a Wiener process and find an explicit expression for the diffusion matrix.”

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