THE EXISTENCE OF A STEADY STATE FOR A PERTURBED SYMMETRIC RANDOM WALK ON A RANDOM LATTICE

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Abstract: In the present paper we consider a continuous time random walk on an anisotropic random lattice. We show the existence of a steady state $\bar{\mu}_\alpha$ for the environment process $(\zeta(t))_{t \geq 0}$ corresponding to the walk. This steady state has the property that the ergodic averages of $\big(F(\zeta(t))\big)_{t \geq 0}$, where F is local (i.e. it depends on finitely many bonds of the lattice only), converge almost surely in the annealed measure to $\int F d\bar{\mu}_\alpha$.

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