1109-60-98 **Le Chen**, **Michael Cranston** and **Davar Khoshnevisan*** (davar@math.utah.edu), Department of Mathematics, University of Utah, Salt Lake City, UT 84105, and **Kunwoo Kim**.
Dissipation and High Disorder.

Given a field $\{B(x)\}_{x\in\mathbf{Z}^d}$ of independent standard Brownian motions, indexed by $\mathbf{Z}^d$, the generator of a suitable Markov process on $\mathbf{Z}^d$, $\mathcal{G}$, and sufficiently nice function $\sigma : [0,\infty) \to [0,\infty)$, we consider the influence of the parameter λ on the behavior of the system,

$$\begin{aligned} \mathrm{d}u_t(x) = \quad & (\mathcal{G}u_t)(x)\,\mathrm{d}t + \lambda\sigma(u_t(x))\mathrm{d}B_t(x) \qquad [t>0,\ x\in\mathbf{Z}^d], \\ & u_0(x) = c_0\delta_0(x), \end{aligned}$$

We show that for any $\lambda > 0$ in dimensions one and two the total mass $\sum_{x\in\mathbf{Z}^d} u_t(x) \to 0$ as $t\to\infty$ while for dimensions greater than two there is a phase transition point $\lambda_c \in (0,\infty)$ such that for $\lambda > \lambda_c$, $\sum_{\mathbf{Z}^d} u_t(x) \to 0$ as $t\to\infty$ while for $\lambda < \lambda_c$, $\sum_{\mathbf{Z}^d} u_t(x) \not\to 0$ as $t\to\infty$. (Received January 26, 2015)