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Takashi Kumagai* (kumagai@kurims.kyoto-u.ac.jp), Research Institute for Mathematical Sciences, Kyoto University, Kyoto, 606-8502, Japan. *Random walk on the incipient infinite cluster for oriented percolation in high dimensions.*

We consider simple random walk on the incipient infinite cluster for the spread-out model of oriented percolation on $\mathbf{Z}^d \times \mathbf{Z}_+$. In dimensions $d > 6$, we obtain bounds on exit times, transition probabilities, and the range of the random walk, which establish that the spectral dimension of the incipient infinite cluster is $\frac{4}{3}$, and thereby prove a version of the Alexander–Orbach conjecture in this setting. This is a joint work with M.T. Barlow (UBC), A.A. Járai (Carleton) and G. Slade (UBC). (Received August 25, 2006)