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## Percolation Transition for Random Walk with Non-local Movements

**M Feshanjerdi and A Saberi**

Department of Physics, University of Tehran, Tehran, Iran

E-mail: m.feshanjerdi@gmail.com

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### Abstract

In this paper, we introduce a percolation model consisting of random walk movements on a lattice. Random walk not only has local movements, but also has non-local movements on the lattice. We obtain the percolation transitions and critical exponents for this model. Our findings show that the percolation threshold decreases with increasing non-local movements. Also, we find the universal scaling functions for the size of the largest gap and biggest cluster by the extreme value theory.

**Keywords:** Percolation Theory, Universality Class, Random Walk

For full article, refer to the Persian section