Roy, Rahul
Percolation of Poisson sticks on the plane. (English) ⟨Zbl 0725.60115⟩

We consider a percolation model on the plane which consists of 1- dimensional sticks placed at points of a Poisson process on $\mathbb{R}^2$; each stick having a random, but bounded length and a random direction. The critical probabilities are defined with respect to the occupied clusters and vacant clusters, and they are shown to be equal. The equality is shown through a 'pivotal cell' argument, using a version of the Russo-Seymour-Welsh theorem which we obtain for this model.

Reviewer: R.Roy (New Delhi)

MSC:

60K35	Interacting random processes; statistical mechanics type models; percolation theory
82B43	Percolation

Cited in **7** Documents

Keywords:

percolation model; critical probabilities; clusters

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