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Quenched Voronoi percolation. (English) [Zbl 1335.60178](#)
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Summary: We prove that the probability of crossing a large square in quenched Voronoi percolation converges to $1/2$ at criticality, confirming a conjecture of *I. Benjamini* et al. [*Publ. Math., Inst. Hautes Étud. Sci.* 90, 5–43 (1999; [Zbl 0986.60002](#))]. The main new tools are a quenched version of the box-crossing property for Voronoi percolation at criticality, and an Efron-Stein type bound on the variance of the probability of the crossing event in terms of the sum of the squares of the influences. As a corollary of the proof, we moreover obtain that the quenched crossing event at criticality is almost surely noise sensitive.

MSC:

[60K35](#) Interacting random processes; statistical mechanics type models; percolation theory
[82B43](#) Percolation

Cited in 7 Documents

Keywords:

quenched Voronoi percolation; noise sensitivity; quenched crossing probabilities

Full Text: [DOI](#) [arXiv](#)

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