

Abstract

We prove that for Bernoulli percolation on \mathbb{Z}^d , $d \geq 2$, the percolation density is an analytic function of the parameter in the supercritical interval. For this we introduce some techniques that have further implications. In particular, we prove that the susceptibility is analytic in the subcritical interval for all transitive short- or long-range models, and that $p_c^{bond} < 1/2$ for certain families of triangulations for which Benjamini & Schramm conjectured that $p_c^{site} \leq 1/2$.