

1151-60-155

Janko Gravner, Alexander E Holroyd and David Sivakoff* (dsivakoff@stat.osu.edu),
1958 Neil Ave, Cockins Hall 440A, Columbus, OH 43210. *Polluted bootstrap percolation in three dimensions.*

Bootstrap percolation with threshold r is a deterministic growth process, wherein an initially occupied set of vertices of the cubic lattice is successively enlarged to include open vertices that have at least r occupied neighbors. When the initial fraction of occupied vertices is p and the initial fraction of closed (not open) vertices is q , one is interested in the probability that the origin is eventually occupied by the bootstrap percolation. We give bounds on the location of a phase transition for this quantity in terms of the p versus q scaling when p and q tend to 0. (Received August 16, 2019)