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Title: Bootstrap Percolation in High Dimensions

Abstract: A *bootstrap percolation* on a finite graph $G = (V, E)$ with *(neighborhood) parameter* ℓ is a nested sequence of subsets of V, $V_0 \subset V_1 \subset \ldots$, such that for $t > 0$ a vertex $v \in V$ belongs to V_t iff either $v \in V_{t-1}$ or v has at least ℓ neighbours in V_{t-1}. The set V_t is the set of *sites occupied at time* t. Clearly, the entire percolation is determined by V_0, the set of sites occupied at time 0. If eventually every site is occupied then we say that the starting set V_0 *percolates*. Choosing the vertices of V_0 at random, with probability p, we get a *random bootstrap percolation with parameter* ℓ and probability p. One of the main objects of study is the *critical probability* p_c, below which percolation is unlikely and above which it is very likely. In the talk I shall review some of the results of Aizenman, Lebowitz, Schonmann, Cerf, Cirillo, Balogh, Pete, Holroyd, and others on random bootstrap percolation on grids and cubes, and will present some new results obtained jointly with Balogh.