1035-05-1443 **Jacques A Verstraete*** (jacques@ucsd.edu), Department of Mathematics, University of California San Diego, La Jolla, CA 92093. *Bootstrap percolation in regular graphs.*

Starting with a finite graph $G = (V, E)$, we independently activate each vertex of G with probability p. A dissemination process consists in each vertex being activated if at most one of its neighbours is not already active. The dissemination probability $\theta_p(G)$ is the probability that all vertices of the graph become activated in finite time. Equivalently, $\theta_p(G)$ is the probability that there is no cycle of inactive vertices. The dissemination threshold for a family $\mathcal{G}$ of graphs, denoted $p_c = p_c(\mathcal{G})$, is defined as follows: for $p > p_c$ and each increasing sequences of graphs $(G_n)_{n\in\mathbb{N}}$ in $\mathcal{G}$, $\theta_p(G_n) \to 0$ whereas for $p < p_c$, there is an increasing sequence of graphs $(G_n)_{n\in\mathbb{N}}$ in $\mathcal{G}$, $\theta_p(G_n) \to 1$. Balogh and Pittel determined the value of $p_c(\mathcal{G}_r)$ when $\mathcal{G}_r$ is the family of random r-regular graphs. We prove that $p_c(\mathcal{G}) = \frac{1}{r-1}$ when $\mathcal{G}$ is the family of all r-regular graphs, which shows that amongst all r-regular graphs, dissemination occurs most easily on random r-regular graphs. We pose some open questions on dissemination in general graphs. (Received September 19, 2007)