1105-05-318 **Paul N Balister*** (`pbalistr@memphis.edu`), Department of Math Sciences, University of Memphis, Memphis, TN 38152, and **Bela Bollobas** and **Paul Smith**. *The speed of bootstrap percolation in two dimensions.*

Let $\mathbb{T}_n$ be the n by n discrete torus and assume each vertex of $\mathbb{T}_n$ is initially *infected* with probability p. At each time step, every vertex with at least two infected neighbors becomes infected. It was proved by Holroyd that there s a threshold of $(1+o(1))\pi^2/18\log n$ above which the entire torus becomes infected with high probability, and below which the entire torus becomes infected only with very low probability. For p greater than this threshold, we consider the number of steps T_n needed for full infection and show that

$$T_n = \begin{cases} \frac{\log n}{2\log(1/(1-p))} + O\big(e^{\frac{\pi^2+o(1)}{9p}}\big) & \text{for } p \gg \frac{1}{\log\log n}; \\ \Theta\Big(\sqrt{\frac{\log n}{p}}\; e^{\frac{\pi^2+o(1)}{18p}}\Big) & \text{for } p \ll \frac{1}{\log\log n}. \end{cases}$$

(Received September 23, 2014)