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## **The bootstrap percolation cellular automaton**

### ABSTRACT

Cellular automaton models arise naturally in the study of a wide variety of physical systems. Such models have obvious mathematical appeal, and lend themselves naturally to computer simulation. However, rigorous analysis is often notoriously difficult. I will focus on bootstrap percolation - an very simple model which gives rise to a rich and often surprising rigorous theory. In particular I will discuss the recent proof that the metastability threshold for the model in two dimensions is  $\pi^2/18$ . The existence of such a threshold settles a conjecture of Aizenman and Lebowitz, while the numerical value corrects simulation predictions of Adler, Stauffer and Aharony.