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Alexander E Holroyd* (holroyd@math.ubc.ca), 121-1984 Mathematics Road, Vancouver, BC
V6T 1Z2, Canada. *Unravelling the bootstrap percolation paradox.*

Bootstrap percolation is a simple cellular automaton model which turns out to hold many surprises. Sites in an L by L square are initially occupied independently with probability p , and subsequently an unoccupied site becomes occupied if it has at least 2 occupied neighbours. Asymptotically for large L , the model is known to undergo a phase transition as the parameter $p \log L$ crosses the threshold $\pi^2/18$, but simulation predictions for this threshold are typically smaller by more than a factor of two! Recent developments go some way towards understanding this discrepancy by proving a slowly converging “correction term” of $-1/\sqrt{\log L}$ (up to $\log \log$ factors).

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