

1102-05-74

Andrew Beveridge* (abeverid@macalester.edu), Macalester College, 1600 Grand Avenue, Saint Paul, MN 55105, and **Andrzej Dudek, Alan Frieze, Tobias Mueller** and **Miklos Stojakovic**. *Maker-Breaker Games on Random Geometric Graphs*.

In a Maker-Breaker game on a graph G , Breaker and Maker alternately claim edges of G . Maker wins if, after all edges have been claimed, the graph induced by his edges has some desired property. We consider three Maker-Breaker games played on the Random Geometric Graph. For each game, we show that if we add edges between n points chosen uniformly at random in the unit square by order of increasing edge-length then, with probability tending to one as $n \rightarrow \infty$, the graph becomes Maker's win at the very moment that it satisfies a simple necessary condition. In particular, with high probability, Maker wins the connectivity game as soon as the minimum degree is at least 2; Maker wins the Hamilton cycle game as soon as the minimum degree is at least 4; and Maker wins the perfect matching game as soon as the minimum degree is at least 2 and every edge has at least 3 neighboring vertices. (Received July 16, 2014)