

The random strategy in Maker-Breaker graph minor games

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In a $(1 : b)$ biased Maker-Breaker game, how good a strategy is for a player can be measured by the bias range for which its rival can win, choosing an appropriate counterstrategy. Bednarska and Luczak proved that, in the H -subgraph building game, the uniformly random strategy for Maker is essentially optimal, up to a constant factor in the bias. Here we prove an analogous result for the H -minor building game, and we study for which choices of H the strategy is within a factor of $1 + o(1)$ of being optimal. In particular, we find a graph H for which the random strategy is provably far away from being optimal, that is, there is a constant factor gap between the critical biases of the random strategy and the optimal strategy.