

# A threshold for the Maker-Breaker clique game

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We look at Maker-Breaker  $k$ -clique game played on the edge set of the random graph  $G(n, p)$ . In this game, two players, Maker and Breaker, alternately claim unclaimed edges of  $G(n, p)$ , until all the edges are claimed. Maker wins if he claims all the edges of a  $k$ -clique; Breaker wins otherwise. We determine that the property that Maker can win this game has a threshold at  $n^{-\frac{2}{k+1}}$ , for all  $k > 3$ . For  $k = 3$  it was previously known that the threshold is  $n^{-\frac{5}{9}}$ .

This is joint work with Tobias Müller.