On the threshold for the Maker-Breaker H-game

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We study the Maker-Breaker H-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 graph H; Breaker wins otherwise. Recently, Müller and Stojaković determined the threshold for the graph property that Maker can win this game if H is a k-clique. Extending their result, we determine the threshold for a large class of graphs, namely those which contain a cycle and whose 2-density is not determined by a K_3 subgraph. In particular, we prove that for every such graph H the threshold coincides with $\Theta(1/b_{\mathcal{H}})$, where $b_{\mathcal{H}}$ is the threshold bias.

This is joint work with Miloš Stojaković and Angelika Steger.