

# The odd-cycle game and connected rules

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Improving a result of Bednarska and Pikhurko, we show that Maker wins the  $(1 : b)$  Maker-Breaker odd-cycle game if  $b \geq ((4 - \sqrt{6})/5 + o(1))n$ . We then introduce new rules for various positional games, which we call “connected rules”, and study Maker-Breaker odd-cycle game under these rules. We bound from above the threshold bias for the connected game, separating it from the known bound which is the same one for any cycle game.