The game chromatic number of sparse random graphs

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Abstract

Given a graph $G$ and an integer $k$, two players play a game, taking turns properly coloring the vertices of $G$ using $k$ colors. The first player wins by successfully coloring all vertices of $G$. The game chromatic number $\chi_g(G)$ is the minimum $k$ for which the first player has a winning strategy.

We present results regarding the asymptotic behavior of this parameter for random graphs with constant average degree and for random regular graphs.

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