Asymmetric Ramsey properties of random graphs for cliques and cycles

Letícia Mattos

IMPA

Abstract:
We say that $G \to (F, H)$ if, in every edge colouring $c : E(G) \to \{1, 2\}$, we can find either a 1-coloured copy of F or a 2-coloured copy of H. The well-known Kohayakawa–Kreuter conjecture states that the threshold for the property $G(n, p) \to (F, H)$ is equal to $n^{-1/m_2(F,H)}$, where $m_2(F, H)$ is given by

$$m_2(F, H) := \max \left\{ \frac{e(J)}{v(J) - 2 + 1/m_2(H)} : J \subseteq F, e(J) \geq 1 \right\}.$$

In this talk, we show that the 0-statement of the Kohayakawa–Kreuter conjecture holds for every pair of cycles and cliques.
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