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Dynamic choosability of triangle-free graphs and sparse random graphs. (English)

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Summary: The r -dynamic choosability of a graph G , written $\text{ch}_r(G)$, is the least k such that whenever each vertex is assigned a list of at least k colors a proper coloring can be chosen from the lists so that every vertex v has at least $\min\{d_G(v), r\}$ neighbors of distinct colors. Let $\text{ch}(G)$ denote the choice number of G . In this article, we prove $\text{ch}_r(G) \leq (1 + o(1))\text{ch}(G)$ when $\frac{\Delta(G)}{\delta(G)}$ is bounded. We also show that there exists a constant C such that the random graph $G = G(n, p)$ with $\frac{6 \log(n)}{n} < p \leq \frac{1}{2}$ almost surely satisfies $\text{ch}_2(G) \leq \text{ch}(G) + C$. Also if G is a triangle-free regular graph, then we have $\text{ch}_2(G) \leq \text{ch}(G) + 86$.

MSC:

- 05C15 Coloring of graphs and hypergraphs
- 05C42 Density (toughness, etc.)
- 05C80 Random graphs (graph-theoretic aspects)

Cited in 1 Document

Keywords:

dynamic choosability; dynamic coloring; dynamic list coloring; strong coloring

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