

Zbl 591.05030

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Coloring graphs with locally few colors. (In English)

Discrete Math. 59, 21-34 (1986). [0012-365X]

Authors' abstract: "Let G be a graph, $m > r \geq 1$ integers. Suppose that it has a good coloring with m colors which uses at most r colors in the neighborhood of every vertex. We investigate these so-called local r -colorings. One of our results (Theorem 2.4) states: The chromatic number of G , $\text{Chr}(G) \leq r2^r \log_2 \log_2 m$ and this value is the best possible in a certain sense. We consider infinite graphs as well."

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Classification:

05C15 Chromatic theory of graphs and maps

Keywords:

strong limit cardinal; intersecting Sperner family; local r -colorings; chromatic number; infinite graphs