CYCLE LENGTHS AND CHROMATIC NUMBER[1]

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Let $G = (V(G), E(G))$ be an undirected graph with vertex set $V(G)$ and edge set $E(G)$. A *proper k-coloring* of G is a function $c\colon V(G) \to \{0, 1, \ldots, k-1\}$ such that, for each $i \in \{0, 1, \ldots, k-1\}$, such that $c(x) \neq c(y)$ for each pair of adjacent vertices x and y. The *chromatic number* of G, denoted by $\chi(G)$, is the minimum positive integer k such that G admits a proper k-coloring.

Several authors have studied the chromatic number of a graph in terms of its cycle lengths, for example: Bondy [1], Tuza [2], Gyárfás [3], Diwan, Kenkre and Vishwanathan [4], Chen *et al.* [5], and C.-M. *et al.* [6].

In this talk we present new upper bounds for the chromatic number of a graph G in terms of its cycle lengths.

References

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