

PACKING COLORING OF SOME UNDIRECTED AND ORIENTED CORONAE GRAPHS

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Abstract

The packing chromatic number $\chi_\rho(G)$ of a graph G is the smallest integer k such that its set of vertices $V(G)$ can be partitioned into k disjoint subsets V_1, \dots, V_k , in such a way that every two distinct vertices in V_i are at distance greater than i in G for every i , $1 \leq i \leq k$. For a given integer $p \geq 1$, the p -corona of a graph G is the graph obtained from G by adding p degree-one neighbors to every vertex of G . In this paper, we determine the packing chromatic number of p -coronae of paths and cycles for every $p \geq 1$.

Moreover, by considering digraphs and the (weak) directed distance between vertices, we get a natural extension of the notion of packing coloring to digraphs. We then determine the packing chromatic number of orientations of p -coronae of paths and cycles.

Keywords: packing coloring, packing chromatic number, corona graph, path, cycle.

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