

## 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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