

An Introduction to Packing Colorings of Graphs

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Abstract

For a positive integer k , a k -packing in a graph G is a subset A of vertices such that the distance between any two distinct vertices from A is more than k . The packing chromatic number of G is the smallest integer m such that the vertex set of G can be partitioned as V_1, V_2, \dots, V_m where V_i is an i -packing for each i . This is a generalization of the standard chromatic number of G in which each of the parts of the partition is required to be an independent set (that is, a 1-packing).

In this introductory talk we discuss some of the bounds that are known for the packing chromatic number and how it is related to other graphical invariants. We also present what is known about the packing chromatic number of some of the common classes of graphs such as trees, complete grid graphs and hypercubes.

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