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ON RADIO CONNECTION NUMBER OF GRAPHS

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Abstract

Given a graph G and a vertex coloring c, G is called l-radio connected if between any two distinct vertices u and v there is a path such that coloring c restricted to that path is an l-radio coloring. The smallest number of colors needed to make G l-radio connected is called the l-radio connection number of G. In this paper we introduce these notions and initiate the study of connectivity through radio colored paths, providing results on the 2-radio connection number, also called $L(2,1)$-connection number: lower and upper bounds, existence problems, exact values for known classes of graphs and graph operations.

Keywords: radio connection number, radio coloring, $L(2,1)$-connection number, $L(2,1)$-connectivity, $L(2,1)$-labeling.

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