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ON TWIN EDGE COLORINGS OF GRAPHS

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Abstract

A twin edge k-coloring of a graph G is a proper edge coloring of G with the elements of $\mathbb{Z}_k$ so that the induced vertex coloring in which the color of a vertex v in G is the sum (in $\mathbb{Z}_k$) of the colors of the edges incident with v is a proper vertex coloring. The minimum k for which G has a twin edge k-coloring is called the twin chromatic index of G. Among the results presented are formulas for the twin chromatic index of each complete graph and each complete bipartite graph.

Keywords: edge coloring, vertex coloring, factorization.

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