

WORM COLORINGS

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Abstract

Given a coloring of the vertices, we say subgraph H is monochromatic if every vertex of H is assigned the same color, and rainbow if no pair of vertices of H are assigned the same color. Given a graph G and a graph F , we define an F -WORM coloring of G as a coloring of the vertices of G without a rainbow or monochromatic subgraph H isomorphic to F . We present some results on this concept especially as regards to the existence, complexity, and optimization within certain graph classes. The focus is on the case that F is the path on three vertices.

Keywords: coloring, rainbow, monochromatic, forbidden, path.

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