

OPTIMAL BACKBONE COLORING OF SPLIT GRAPHS WITH MATCHING BACKBONES

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Abstract

For a graph G with a given subgraph H , the backbone coloring is defined as the mapping $c : V(G) \rightarrow \mathbb{N}_+$ such that $|c(u) - c(v)| \geq 2$ for each edge $\{u, v\} \in E(H)$ and $|c(u) - c(v)| \geq 1$ for each edge $\{u, v\} \in E(G)$. The backbone chromatic number $BBC(G, H)$ is the smallest integer k such that there exists a backbone coloring with $\max_{v \in V(G)} c(v) = k$.

In this paper, we present the algorithm for the backbone coloring of split graphs with matching backbone.

Keywords: backbone coloring, split graphs, matching.

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