Modular monochromatic (3, t)-colorings

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Let $c : V(G) \to \mathbb{Z}_3$ be a vertex coloring of a nontrivial connected graph G where $c(v) \neq 0$ for at least one vertex v. Then the coloring c induces a new coloring $\sigma : V(G) \to \mathbb{Z}_3$ of G defined by $\sigma(v) = \sum_{u \in N[v]} c(u)$ where N[v] is the closed neighborhood of v and the sum is in $\mathbb{Z}_3$. If $\sigma(u) = \sigma(v) = t \in \mathbb{Z}_3$ for every two vertices u and v in G then the coloring c is called a modular monochromatic (3, t)-coloring of G. Several results about modular monochromatic (3, t)-coloring are presented.

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