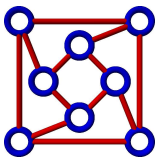

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FORBIDDEN SUBGRAPHS AND RAINBOW CONNECTION IN GRAPHS WITH MINIMUM DEGREE 2

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A connected edge-colored graph G is rainbow-connected if any two distinct vertices of G are connected by a path whose edges have pairwise distinct colors; the rainbow connection number $\mathrm{rc}(G)$ of G is the minimum number of colors such that G is rainbow-connected.
We consider families $\mathcal{F}$ of connected graphs for which there is a constant $k_{\mathcal{F}}$ such that, for every connected $\mathcal{F}$-free graph G with minimum degree 2, $\mathrm{rc}(G) \leq \mathrm{diam}(G) + k_{\mathcal{F}}$, where $\mathrm{diam}(G)$ is the diameter of G . We show that condition holds for the families $\mathcal{F}_1 = \{Z_3, S_{3,3,3}\}$,$\mathcal{F}_2 = \{S_{2,2,2}, N_{2,2,2}\}$.