COLORED-INDEPENDENCE ON BIPARTITE GRAPHS

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Colored-independence is a storage/scheduling problem which, in addition to the standard restriction involving pairs of elements that cannot be placed together, considers sets of elements that must be placed together. A set $S$ is a colored-independent set if, for each color class $V_i$, $S \cap V_i = V_i$ or $S \cap V_i = \emptyset$. Results for the independence-partition number, $\beta_{\text{PRT}}(G)$, and the lower independence-partition number, $i_{\text{PRT}}(G)$, for a variety of families will be presented, including paths, cycles, grids, and a characterization of bipartite graphs that achieve $i_{\text{PRT}}(T) = |V_1|$ where $V_1$ is the smaller of the bipartition sets of graph $G$. Restrictions placed on the size of each $V_i$ will also be considered, particularly $\beta_{\text{cpl}}(G)$ where for each $V_i$, $|V_i| \leq 2$.

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References


