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Variations on the γ-graph

Given the collection $S_1, S_2, \ldots, S_n$ of minimum dominating sets of a graph G, the *γ-graph* $G(\gamma)$ of G has $V(G(\gamma)) = \{v_1, v_2, \ldots, v_n\}$ where $v_i \in V(G(\gamma))$ corresponds to the set S_i in G, and $v_i v_j \in E(G(\gamma))$ if and only if there exist $u, w \in V(G)$ with $uw \in E(G)$, such that $S_i = (S_j - \{u\}) \cup \{w\}$. We present new variations on the γ-graph, including the γ^{ID}-graph and the i-graph, defined by the *identifying code number* $\gamma^{ID}(G)$, and the *independent domination number* $i(G)$, respectively. We examine some initial structural and existence results for these new classes.