STRONG (WEAK) NEIGHBOURHOOD COVERING SETS OF A GRAPH

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Abstract: The ve-degree of a vertex $u \in V(G)$, denoted by $d_{ve}(u)$, is the number of edges in the subgraph $\langle N[u] \rangle$. A vertex u is said to n-cover (neighbourhood-cover) an edge e if e is an edge of the subgraph $\langle N[u] \rangle$. A set $S \subseteq V(G)$ is called a n-covering set of a graph G if every edge in G is n-covered by some vertex in S. The n-covering number $\alpha_n(G)$ is the minimum cardinality of a n-covering set of G. In this paper, we introduce new parameters such as strong (weak) n-covering number and strong (weak) n-independence number using ve-degrees of vertices, and we establish a relationship between them. Further, we define and study n-cover balanced sets.