Let $G = (V, E)$ be an undirected, simple and connected graph. A set $C \subseteq V$ of vertices in $G$ is called a convex set if $I(C) = C$ where $I(C)$ is the set of all vertices in the $u$-$v$ geodesic path of $G$ for all $u, v \in C$. For any set $C \subseteq V$, the convex hull of $C$ denoted by $[C]$ is defined as the smallest convex subset of $V(G)$ containing $C$. Let $S$ be a minimum vertex covering transversal dominating set viz. a $\gamma_{vct}$-set. Then the convex hull of $S$ is defined as the smallest convex set containing $S$. We define the convex hull number of $G$ with respect to $\gamma_{vct}$ sets, denoted by $CH_{\gamma_{vct}}(G)$ as $\frac{1}{2}$.
Convex Hull of γ vct-sets in Graphs

\( \gamma \)

\[(G) := \min \{|C|: C = [S]\text{ is the convex hull of } \gamma \text{ vct-set } S\} \]

- set \([S]\) where the minimum is taken over all the vct-sets of \(G\). If \([S]\ = S\), then \(S\) is called a convex \(\gamma\) vct- set.
- set. If \([S] = V(G)\), then \(S\) is called a hull \(\gamma\) vct-set.
- In this paper, the convex hull of \(\gamma\) vct-sets and the convex hull number with respect to \(\gamma\) vct-sets in various graphs are analysed.

References

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