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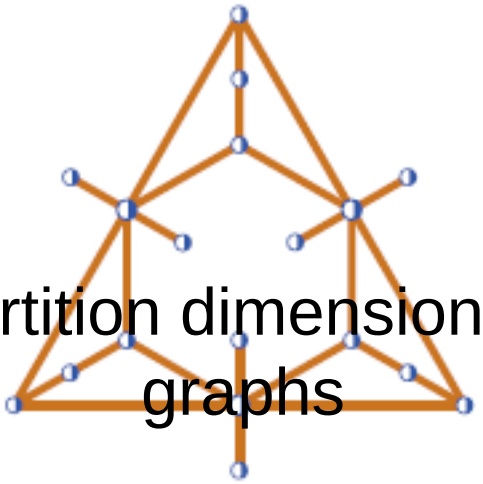

On the partition dimension of corona graphs

Content :

Given a set of vertices $S=\{v_1,v_2,...,v_k\}$ of a connected graph G, the metric representation of a vertex v of G with respect to S is the vector $r(v|S)=(d(v,v_1),d(v,v_2),...,d(v,v_k))$, where $d(v,v_i)$, $i\in \{1,...,k\}$ denotes the distance between v and v_i. S is a resolving set of G if for every pair of vertices u,v of G, $r(u|S)\ne r(v|S)$. The metric dimension $dim(G)$ of G is the minimum cardinality of any resolving set of G.

Given an ordered partition $\Pi =\{P_1,P_2, ...,P_t\}$ of vertices of a connected graph G, the partition representation of a vertex v of G, with respect to the partition Π is the vector $r(v|\Pi)=(d(v,P_1),d(v,P_2),...,d(v,P_t))$, where $d(v,P_i)$, $1\leq i\leq t$, represents the distance between the vertex v and the set P_i, that is $d(v,P_i)=\min_{u\in P_i}\{d(v,u)\}$. Π is a resolving partition for G if for every pair of vertices u,v of G, $r(u|\Pi)\ne r(v|\Pi)$. The partition dimension $pd(G)$ of G is the minimum number of sets in any resolving partition for G.

In this work we study the partition dimension of corona graphs. Particularly, we obtain some bounds on the partition dimension, we give some relationships between the metric dimension and partition dimension and we deduce some exact values of some particular cases of corona graphs.

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