

# Local Multiset Dimension of Product Graphs

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Let  $G$  be a connected graph and  $W$  be a set of vertices of  $G$ . The representation multiset of a vertex  $v$  with respect to  $W$ ,  $r_m(v | W)$ , is defined as a multiset of distances between  $v$  and the vertices in  $W$ . If  $r_m(u | W) \neq r_m(v | W)$  for every pair of adjacent vertices  $u$  and  $v$ , then  $W$  is called an  $m$ -local resolving set of  $G$ . If  $G$  has an  $m$ -local resolving set, then the cardinality of a smallest  $m$ -local resolving set is called the local multiset dimension of  $G$ , denoted by  $md_l(G)$ ; otherwise, we say that  $md_l(G) = \infty$ . In this talk, we discuss general properties of local multiset dimension and determine the local multiset dimension of some product graphs.