# On the Disjunctive Total Domination Numbers of Grid Graphs

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**Abstract.** For a graph *G* = (*V, E*), *D* ⊆ *V* is a *dominating set* if every vertex in *V* \ *D* has a neighbor in *D*. If every vertex in *V* has to be adjacent to a vertex of *D*, then *D* is called a *total dominating set* of *G*. The (total) domination problem on *G* is to find a (total) dominating set *D* of the minimum cardinality. The (total) domination problem is well-studied. Recently, the following variant is proposed. Vertex subset *D* is a *disjunctive total dominating set* if every vertex of *V* is adjacent to a vertex of *D* or has at least two vertices in *D* at distance 2 from it. The disjunctive total domination problem on *G* is to find a disjunctive total dominating set *D* of the minimum cardinality. In this talk, we survey some recent results of the disjunctive total domination problem. In particular, we will present some ideas for obtaining bounds of the disjunctive total domination numbers of grid graphs.