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**Kim A. S. Factor\*** ([kim.factor@marquette.edu](mailto:kim.factor@marquette.edu)), 1313 W. Wisconsin Ave., Milwaukee, WI 53201. *Structure of the underlying graph giving a minimum directed restrained domination set.*

Extensions of domination in graphs includes restrained domination, as introduced by Domke, Hattingh, Hedetniemi, Laskar and Markus in the 1990s. Let  $G = (V, E)$  be a graph with vertex set  $V$  and edge set  $E$ . A set  $S \subseteq V$  is a *restrained dominating set* if every vertex in  $V - S$  is adjacent to a vertex in  $S$  and another vertex in  $V - S$ . The cardinality of a minimum restrained dominating set is the *restrained domination number*, denoted  $\gamma_r(G)$ . Here, we give initial results of the directed graph extension based upon this concept, the *directed restrained dominating set* of a digraph  $D = (V, A)$ . Further, the structure of an underlying graph whose orientation can give a minimum restrained domination set is discussed, with a labeling algorithm provided for complete bipartite underlying graphs and extended to complete  $t$ -partite underlying graphs. (Received September 26, 2017)