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Jan Kratochvíl* (honza@kam.mff.cuni.cz), KAM MFF UK Charles University, Malostranské nám 25, 11800 Praha 1, Czech Rep. *Teledomination in special graph classes: A survey of algorithmic and complexity results.*

Given two sets σ and ρ of nonnegative integers (as parameters of the problem), a set S of vertices of a graph is called (σ, ρ) -dominating if the number of S -neighbors of any vertex of S (of $V - S$) is an element of σ (of ρ , respectively). This notion of generalized domination was introduced by Jan Arne Telle in 1990's and has been investigated by Telle, Proskurowski, Heggernes, Miller, Golovach, Fomin, Kratsch, and others. In particular, it is known that for any pair of finite nonempty sets σ and ρ (such that $0 \notin \rho$), already the existence of a (σ, ρ) -dominating set in an input graph is NP-complete. We survey recent results in this area, including the computational complexity of (σ, ρ) -domination in special graph classes, exact exponential time algorithms for general graphs, and a related question of bounding the number of (σ, ρ) -dominating sets in a connected graph. (Received February 03, 2009)