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Polynomial-time efficient domination on $(P_6, house)$ -free graphs and $(P_6, bull)$ -free graphs

The NP-completeness of the Efficient Domination(ED) problem on chordal graphs and claw-free graphs implies: if F is not a linear forest, ED is NP-complete on F -free graphs. For F -free graphs (F a linear forest), the only remaining open case is the complexity of ED on P_6 -free graphs. We show ED/WeightedED is solvable in polynomial time on $(P_6, house)$ -free graphs and $(P_6, bull)$ -free graphs, using a known reduction from ED/WED on G to Maximum Weight Independent Set on G^2 . Moreover, we show that the square of a P_6 -free graph with an efficient dominating set is hole-free. (With A. Brandstädt, E. Friese)