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Iztok Peterin, Douglas Rall* (doug.rall@furman.edu), **Tadeja Kraner Šumenjak** and **Aleksandra Tepeh**. *Partitioning the vertex set of G to make $G \square H$ an efficient open domination graph.*

A graph is an **efficient open domination graph** if there exists a subset of its vertices whose open neighborhoods partition the vertex set of the graph. For a fixed graph H we would like a characterization of those graphs G such that the Cartesian product $G \square H$ is an efficient open domination graph. In case H is a complete graph of order at least 3 or a complete bipartite graph we exhibit a certain type of weak partition of $V(G)$ whose existence is equivalent to $G \square H$ being an efficient open domination graph. If $n \geq 3$, then this weak partition property allows us to give a constructive characterization of the trees T such that $T \square K_n$ is an efficient open domination graph. (Received September 10, 2015)