DISTANCE 2-DOMINATION IN PRISMS OF GRAPHS

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Dedication

Ferran Hurtado passed away a few months after Eduardo Rivera-Campo and Rita Zuazua visited him and Mercè Mora in Barcelona, where most of this research was made. We all dedicate this final version to Ferran’s memory.

Abstract

A set of vertices $D$ of a graph $G$ is a distance 2-dominating set of $G$ if the distance between each vertex $u \in (V(G) - D)$ and $D$ is at most two. Let $\gamma_2(G)$ denote the size of a smallest distance 2-dominating set of $G$. For any permutation $\pi$ of the vertex set of $G$, the prism of $G$ with respect to $\pi$ is the graph $\pi G$ obtained from $G$ and a copy $G'$ of $G$ by joining $u \in V(G)$ with $v' \in V(G')$ if and only if $v' = \pi(u)$. If $\gamma_2(\pi G) = \gamma_2(G)$ for any permutation $\pi$. 

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π of \( V(G) \), then \( G \) is called a universal \( \gamma_2 \)-fixer. In this work we characterize the cycles and paths that are universal \( \gamma_2 \)-fixers.

**Keywords:** distance 2-dominating set, prisms of graphs, universal fixer.

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**References**


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