SOME COMBINATORIAL PROPERTIES OF ABELIAN CAYLEY GRAPHS

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Let $(G, \cdot)$ be a group and $S = S^{-1}$ be a non-empty subset of $G$ not containing the identity element $e$ of $G$. The Cayley graph $\text{Cay}(G, S)$ is the simple graph having vertex set $G$ and edge set $\{\{v, vs\} | v \in G, s \in S\}$. A Cayley graph is said to be an Abelian Cayley graph whenever $G$ is an Abelian group.

Let $\Sigma = (\Gamma, \sigma)$ be a signed graph (or sigraph in short), where $\Gamma$ is the underlying graph of $\Sigma$ and $\sigma : E \longrightarrow \{+, -\}$ is a function.

In this talk we investigate some combinatorial properties of Abelian Cayley graphs such as dominating number, total dominating number and diameter. Indeed we will investigate balancing, clusterability and sign-compatibility of $\Sigma = (\Gamma, \sigma)$ where $\Gamma$, the underlying graph, is an Abelian Cayley graph.

Keywords: Abelian Cayley graph, dominating number, sign graph.

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References


