

ON RAINBOW CATERPILLARS IN ABELIAN GROUPS

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Given a finite Abelian group $(A, +)$, consider a graph $G = (V, E)$. The labeling $f: V(G) \rightarrow A$ of the vertices of G induces an edge labeling f^* in G , thus the edge uv receives the label $f^*(uv) = f(u) + f(v)$. The tree T is A -rainbow colored if f is a bijection and edges have different colors. In this paper, we give necessary and sufficient conditions for a caterpillar with three spine vertices to be A -rainbow, when A is an Abelian group. As a result, we present a new family of trees that serve as counterexamples to conjecture by Erickson et al. (see [1]) about weakly A -cordial trees.

References

- [1] W.Q. Erickson, D. Herden, J. Meddaugh, M.R. Sepanski, I. Echols, C. Hammon, J. Marchena-Menendez, J. Mohn, B. Radillo-Murguia, I. Ruiz-Bolanos, *Klein cordial trees and odd cyclic cordial friendship graphs*, *Discrete Math.*, 346(9) (2023) 113488.