

1096-05-2429

Katherine F. Benson* (katie.benson@westminster-mo.edu). *On Radio Labeling of Some Caterpillar Graphs*. Preliminary report.

A radio labeling of a simple connected graph G with diameter D is a function $f : V(G) \rightarrow \mathbb{Z}^+$ such that for every two distinct vertices u and v of G , the radio condition, $d(u, v) + |f(u) - f(v)| \geq D + 1$ is satisfied. The radio number of a graph G is the smallest integer m for which there exists a radio labeling f with $f(v) \leq m$ for all $v \in V(G)$. A general lower bound for the radio number of trees, and thus caterpillar graphs, has already been established. In this talk, we discuss when an upper bound to match this lower bound is not possible due to the structure of some caterpillar graphs. For other particular caterpillar graphs whose radio number can be determined, we discuss strategies on the order to label the vertices to achieve this optimal labeling. (Received September 17, 2013)