

1125-05-2900

Taylor McMillan* (mcmi9872@bears.unco.edu) and **Oscar Levin** (oscar.levin@unco.edu).

Computing Odd Graceful Labelings in Noncomputable Graphs.

A *graceful labeling* of a graph $G = (V, E)$ is a injection $\lambda : V \rightarrow \{0, 1, 2, \dots, |E|\}$ such that the induced edge label, $|\lambda(v_i) - \lambda(v_j)|$ for $\{v_i, v_j\} \in E$, is distinct for all edges. This definition can be extended to countably infinite graphs. We explore the effective content of a result of Chawathe and Krishna about *odd* graceful labelings (the induced labels must be distinct odd numbers) of bipartite graphs, working in the context of computability theory. We will show that there is a connected, locally finite, bipartite, computably enumerable graph that has an odd graceful labeling, but no such computable labeling. (Received September 20, 2016)