



A NEW FAMILY OF GRACEFUL TREES

PAVEL HRNČIAR*, GABRIELA MONOSZOVÁ

A graceful labelling of an undirected graph G with n edges is a one-to-one function from the set of vertices of G to the set $\{0, 1, 2, \dots, n\}$ such that the induced edge labels are all distinct (the label of an edge is the absolute value of the difference between the labels of its end-vertices). The famous Graceful Tree Conjecture (GTC) states that every tree has a graceful labelling. Nevertheless, in spite of a big effort to prove GTC, it is still wide open. There are numerous results proving the conjecture for some very specific classes of trees.

We introduce a new family of trees. Consider a family of stars. Add a new vertex. Join one end-vertex of each star with this new vertex by a path of length h . The tree so obtained will be called a generalized banana tree and for $h = 1$ it is known as a banana tree.

Theorem *Every generalized banana tree is graceful.*