On the 7-cordiality of trees

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In 1991, M. Hovey defined the $k$-cordial labeling of a graph as a function from the set of vertices to $\mathbb{Z}_k$ so that each label appearson at most one more vertex than any other, and each induced edge weight (found by summing the labels on the incident vertices, modulo $k$) appears on at most one more edge than any other. He conjectured that for any positive integer $k$, all trees are $k$-cordial, and showed this holds for $3 \leq k \leq 5$. Driscoll, et. al., proved that all trees are 6 cordial. In this work we discuss the problem of proving all trees are 7-cordial.

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