Antimagic labling of caterpillars

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A caterpillar of length s is such a tree, that by deleting all leaves you get a path of length $s-2$ (or s if you consider endvertices special).

An antimagic labling of a graph of order n and size m is a bijection from the set of edges to the integers $1, \ldots, m$ such that all n vertex sums are pairwise distinct. A vertex sum is the sum of labels of all edges incident with this vertex. A graph is called antimagic if it allows an antimagic labeling. A well known conjecture says [1] that every connected graph, but K_2, is antimagic.

Despite certain progress the conjecture is still open - even for trees. E.g. two related papers [2, 3] settle the problem for many dense trees with a limited set of vertices of degree 2.

We can show caterpillars with at least $3s/2$ leaves are antimagic.

Open problem: are caterpillars with at most $3s/2$ leaves antimagic?

References

[1] N. Hartsfield and G. Ringel, *Pearls in Graph Theory*, Academic Press, Inc., Boston, 1990 (revised version, 1994), pp. 108–109.

[2] G. Kaplan, A. Lev, Y. Roditty, *On zero-sum partitions and anti-magic trees*, Discrete Math. 309 (2009) 2010–2014.

[3] Y. Liang, T. Wong, X. Zhu, *Anti-magic labeling of trees*, Discrete Mathematics 331 (2014) 9–14