Linear-time Algorithms for Encoding Trees as Sequences of Node Labels (Abstract)

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In this paper we present $O(n)$-time algorithms for encoding/decoding n-node labeled trees as sequences of $n - 2$ node labels. All known encodings of this type are covered, including Prüfer-like codes and the three codes proposed by Picciotto − the happy, blob, and dandelion codes. The algorithms for Picciotto's codes are of special significance as previous publications describe suboptimal approaches requiring $O(n \log n)$ or even $O(n^2)$ time.

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