

The Minimum Label Spanning Tree Problem:
Some Genetic Algorithm Approaches

by

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Abstract

Given a connected, undirected graph G whose edges are labeled (or colored), the minimum label spanning tree (MLST) problem seeks a spanning tree on G with the minimum number of distinct labels (or colors). The MLST is motivated by applications in communications network design.

The MLST has been shown to be NP-hard and an effective heuristic has been proposed and analyzed. In addition, metaheuristics (including genetic algorithms) have been developed. In computational tests, the genetic algorithms perform exceptionally well. In this presentation, we summarize much of this work and discuss some variants, if time allows.

References

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