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Home
Abstract submission
Search abstract
Topic keywords
Clusters
F.A.Q.
Program
Help

> Treat abstract

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540. A heuristic method for the close enough traveling salesman problem

Invited abstract in session **ME-19: Vehicle Routing**, cluster **Combinatorial Optimization**.

Monday, 16:15-17:45

Room: FENH105

Authors (first author is the speaker)

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Abstract

The traveling salesman problem is one of the most studied combinatorial optimization problems. Given n cities and their pairs of distances, one seeks to find a tour of minimum distance passing through all cities. In the Close Enough TSP variant, it is unnecessary to pass exactly through each city, but through one neighborhood of each city. This problem can be modeled as a continuous optimization problem with integer variables. In this paper, we present a heuristic method to find solutions of the Close Enough TSP, including a constructive heuristic, a local search based on the 2-opt movement and a continuous optimization method of the coordinate block search; for a given permutation, it tries to find a point to be visited in the neighborhood of each city, to minimize the tour length for the given permutation. Numerical experiments illustrate the performance of the proposed method.

Keywords

- Programming, Nonlinear
- Combinatorial Optimization
- Routing

Status: accepted

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