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# An enhanced lower bound for the Time-Dependent Traveling Salesman Problem

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## Abstract

Given a graph whose arc traversal times vary over time, the Time-Dependent Travelling Salesman Problem amounts to find a Hamiltonian tour of least total duration. In this research work we define a new lower bounding

scheme whose parameters are determined by fitting the traffic data. Computational results show that, when

embedded into a branch-and-bound procedure, this lower bounding mechanism allows to solve to optimality a larger number of instances than state-of-the-art algorithms.

**Keywords:** travelling salesman problem, time dependence, lower and upper bounds

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