Models and Algorithms for the Consistent Travelling Salesman Problem with Vehicle Idling

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The consistent travelling salesman problem looks for a minimum-cost set of Hamiltonian routes, one for every day of a given time period. When a customer requires service in several days, the service times on different days must differ by no more than a given threshold (for example, one hour). There are many variants of this problem addressed in the literature (see some of them in the references). The simplest variant is the one addressed in [8] where the vehicle is not allowed to wait along the route. A novel branch-and-cut approach is introduced in [1] leading to the current state-of-the-art for this variant. A different problem variant where the vehicle is allowed to wait along the route was addressed in [9]. Our talk details a new mathematical model for this variant with idle times and analyses computational results.

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