New Benchmark Instances for the Capacitated Vehicle Routing Problem

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Abstract

The recent research on the CVRP is being slowed down by the lack of a good set of benchmark instances. The existing sets suffer from at least one of the following drawbacks: (i) became too easy for current algorithms; (ii) are too artificial; (iii) are too homogeneous, not covering the wide range of characteristics found in real applications. We propose a new set of instances, designed in order to provide a more comprehensive and balanced experimental setting. Beyond having a greater discriminating power to tell "which algorithm is better", this benchmark should also allow a deeper statistical analysis of the performance of an algorithm, investigating how the characteristics of an instance affect its performance. We report such an analysis on state-of-the-art exact and heuristic methods.

Keywords: Vehicle Routing Problem, Algorithm Experimentation

Preprint submitted to European Journal of Operational Research

March 5, 2014

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