

Polynomial time approximation schemes for Vehicle Routing Problems

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Abstract. The Vehicle Routing Problem (VRP) is a famous combinatorial optimization problem having a variety operations research applications and adopting many efforts and publications in the field of algorithm design. Although, moderate-size instances of the problem can be solved to optimal using well known Branch-and-Price algorithms, contemporary applications produce a challenge of tackling instances of much bigger size, for which only approximate solutions can be found efficiently. Although, the main stream in this field is presented by several kinds of heuristics and meta-heuristics, polynomial time algorithms with theoretically proved approximation guarantees and PTASs are actively developed as well. In this lecture, we give a short overview of these results.