

Near Optimal Solution for a Class of Green Vehicle Routing Problem

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Abstract

Green Vehicle Routing Problem (G-VRP) aims to provide the least amount of pollution released and cost associated during routing a fleet of vehicles that run by an environmental friendly fuel. A genetic algorithm is proposed to provide a near optimal solution for a mathematical model formulated to present a case of G-VRP where the fleet is run by one type of alternative fuel resources. The developed heuristic algorithm is able to handle large problem sizes with larger number of customers by applying Genetic Algorithm. In order to validate the proposed algorithm, the obtained results are examined against test instances previously used in other research. The obtained results show better results in terms of less distance travelled with less emissions released in a timely manner.