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stand infrastructure problem

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ABSTRACT

This article reports using a bi-objective evolutionary algorithm interacting with a traffic simulator and data exploration methods to analyze the optimal capacity and location of charging infrastructure for electric vehicles. In this work, the focus of the study is the city of Cuenca, Ecuador. We configure a scenario with 20 candidate charging stations and 500 electric vehicles driving according to the mobility distribution observed in this city. We optimize the vehicle's travel time that requires recharging and the number of charging stations distributed in the city. Quality of Service is defined as the ratio of charged vehicles to vehicles waiting for a charge and is considered a constraint. The approximate Pareto set of

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Index Terms

Evolutionary bi-objective optimization for the electric vehicle charging stand infrastructure problem



Applied computing



Theory of computation


Operations research


Design and analysis of algorithms


Transportation


Mathematical optimization


Discrete optimization

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