

Fuzzy Vehicle Routing Problem for Extreme Environment

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Abstract : A fuzzy vehicle routing problem is considered in the possibilistic environment. A new criterion, maximization of expectation of reliability for movement on closed routes is constructed. The objective of the research is to implement a two-stage scheme for solution of this problem. Based on the algorithm of preferences on the first stage, the sample of so-called "promising" routes will be selected. On the second stage, for the selected promising routes new bi-criteria problem will be solved - minimization of total traveled distance and maximization of reliability of routes. The problem will be stated as a fuzzy-partitioning problem. Two possible solutions of this scheme are considered.

Keywords : vehicle routing problem, fuzzy partitioning problem, multiple-criteria optimization, possibility theory

Conference Title : ICFSNC 2014 : International Conference on Fuzzy Systems and Neural Computing

Conference Location : Barcelona, Spain

Conference Dates : October 27-28, 2014