

Fuzzy Modeling of the Vehicle Routing Problem for Extreme Environment

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In the extreme and uncertainty environment the difficulty of vehicle movement between different customers cause the imprecision of time of movement and the uncertainty of feasibility of movement. In this work this uncertainty is presented by a possibility distribution. A new multiple criteria fuzzy optimization approach for the solution of the vehicle routing problem is constructed. A new subjective criterion – maximization of feasibility of movement on closed routes is constructed. The problem is reduced on the min-max bicriteria fuzzy partitioning problem for the so called promising routes. For the numerical solution of the scaling model Christofides exact algorithm is realized. For the illustration of the results of the constructed new fuzzy approach a numerical example is presented.