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SOLVING A FUZZY TRANSPORTATION PROBLEM BASED ON EXPONENTIAL MEMBERSHIP FUNCTIONS *

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Abstract

In the traditional transportation problem, it is assumed that decision makers are confident about the exact values of transportation costs, supply and demand of the product. When solving a transportation problem with inaccurately determined transportation costs, supply and demand quantities, a fuzzy approach is used. In this paper, a transportation problem based on statistical data is considered. The frequency distributions on the transportation costs and the supply and demand quantities in real-life transportation problems are used as the base for determining the parameters of exponential membership functions. An approach for solving fuzzy transportation problem using exponential fuzzy numbers is proposed. A numerical example is solved to illustrate the described approach.

MSC: 03E72, 90C08, 90C70

keywords: Fuzzy transportation problem, Exponential membership function, Ranking fuzzy numbers

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