

**ABSTRACT****FUZZY LINEAR PROGRAMMING  
USING MULTIATTRIBUTE VALUE FUNCTION**

Masahiro INUIGUCHI

Hidetomo ICHIHASHI

Hideo TANAKA

*University of Osaka Prefecture*

In this paper, a fuzzy linear programming problem is formulated under the assumption that a multiattribute value function is given, and its method of solution is proposed. The fuzzy linear programming problem in this paper is the unconstrained linear programming problem with several objective functions whose coefficients are fuzzy numbers. These fuzzy numbers are regarded as the possibility distribution of the coefficients. The measurable multiattribute value function is given in the objective function space. In the analogy of the principle of maximizing expected utility which is a decision procedure under the probability distribution, the principle of maximizing possible value and the principle of maximizing necessary value are proposed as the decision procedures under the possibility distribution. The possible value and the necessary value are represented as fuzzy integrals of the value function with respect to the possibility measure and the necessity measure respectively, whereas the expected utility is represented as Lebesgue's integral of the utility function with respect to probability measure. The fuzzy linear programming problem is formulated using each of these decision procedures. These problems are reduced to nonlinear programming problems. A method of solution using simplex method is proposed.