

THE COMPARISON OF TWO METHODS FOR SOLVING A MULTIOBJECTIVE NONLINEAR PROGRAMMING PROBLEM

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Abstract

Multiobjective Optimization has applications in many fields such as engineering, finance, management sciences and others. In this paper we will discuss two methods for a non-linear programming problem with many purposes (MONLP) and at the end compare the two methods. Iterative method provides a practical solution to MONLP problems by deriving weights compromise and combined judgment with an automatic technique to optimize fuzzy decision. Another method is the GOAL programming (GP). In this method the problem is to minimize the sum of the weights of the deviations by giving different weights values . So the method combines non linear programming problem with multi objective problems (MONLP) with the decision making problem (DM) to the weight of each deviation from goals. The main feature of these problems is that decision makers should achieve many goals that are contradictory to each other. A numerical example will illustrate some aspects of the results addressed in this paper. The problem presented in this paper considers the coordinates of three branches of a bank and consist of finding a new point (branch). Distance limitation from one branch to another is the problem we take in consideration and the goal is to minimize the distance of this branch from the other two branches, after the bank has observed simultaneously overload work in these last two branches.

Keywords: *Nonlinear-programming, multi-objective, distance, fuzzy, decision-making.*