Abstract

This paper presents priority based fuzzy goal programming approach to multi-objective quadratic programming problem. In the proposed approach, we construct the quadratic membership functions by determining the individual best solution of the objective functions subject to the system constraints. The quadratic membership functions are then transformed...
into equivalent linear membership functions at the individual best solution point by first order Taylor series approximation. Then fuzzy goal programming approach is used for achieving highest degree of each of the membership goals by minimizing negative deviational variables. Then, sensitivity analysis with the variations of the priority structure is performed to identify the most appropriate priority structure in the decision-making context by using distance function. A numerical example is solved in order to show the efficiency of the proposed approach.

Reference

Multi-Objective Quadratic Programming Problem: A Priority based Fuzzy Goal Programming

Index Terms

Computer Science

Fuzzy Systems

Key words

Goal programming

Multi-objective quadratic programming

Priority based fuzzy goal programming

Quadratic programming