Finding proper efficient solutions in fuzzy multiobjective fractional programming

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Abstract

A solution algorithm to fuzzy multiobjective fractional programming problems is suggested. These problems involve fuzzy parameters in the right-hand side of the constraints and the concept of α-level set of the fuzzy numbers is given. Results of Geoffrion for efficient and properly efficient solutions of multiobjective programming problems are extended to fuzzy multiobjective fractional programming problems. An illustrative numerical example is presented to clarify the developed theory and the solution algorithm.

Keywords : *Multiobjective fractional programming, fuzzy numbers, α-level set, efficient solutions, proper efficiency.*

1. Introduction

Linear fractional objective functions occur frequently as measures of performance in a variety of circumstances such as when satisfying objectives under uncertainty [7, 9, 10, 11]. Real-valued linear objective function fractional programming was introduced into literature by Charnes and Cooper [1]. Results of Geoffrion for efficient and properly efficient solutions of multiobjective programming problems are extended in [13] to multiobjective fractional programming problems.

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