

# A NEW APPROACH TO SOLVE INTUITIONISTIC FUZZY NONLINEAR FRACTIONAL PROGRAMMING PROBLEM

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## ABSTRACT

This paper presents Intuitionistic fuzzy nonlinear fractional programming problem. The cost of objective function, the resources and technical coefficients are taken to be triangular fuzzy numbers. Here, the IFNLFP problem is transformed into an equivalent crisp Multi-Objective nonlinear fractional programming problem (MONLFPP). The transformed MONLFPP is reduced into nonlinear programming problem by using fuzzy mathematical programming approach which can be solved easily by suitable NLPP algorithm. The proposed procedure is illustrated by a numerical example.

## KEYWORDS

Nonlinear programming problem, Fuzzy mathematical programming, Membership function, Triangular intuitionistic fuzzy number, Multi objective nonlinear fractional programming problem.

## 1 INTRODUCTION

Fractional programming concerns with the optimization problem of one or several ratios of functions subject to some constraints. These ratios are quantities that measure the efficiency of system, such as cost/profit, cost/time, cost/volume and output/worker, while several ratios of functions are measured in different scales at the existence of some conflicts. The optimal solution for an objective function may not be an optimal solution for some other objective functions. Therefore, one needs