

# Multiobjective Programming Problem with Fuzzy Relational Equations

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**Abstract**—In this paper we propose a methodology for the solution of multiobjective programming problem with fuzzy relational equations (FRE's) as constraints. In the first part of the proposed methodology, we find the feasible solution set of FRE's and give an algorithm to compute minimal solutions and maximal solutions of objective functions which can also be computed by constructed computer program and then in the second part of the proposed methodology which works for the minimization of perpendicular distances between the parallel hyper planes at the optimal points of the objective functions. A compromise optimal solution is obtained as a result of minimization of supremum perpendicular distance. Suitable membership function has been defined with the help of supremum perpendicular distance. An example is given in last to support the model.

**Keyword**—Fuzzy relational equations, Multiobjective programming, Disjunction and conjunction operators, Fuzzy programming, Minimal solution.

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