

عنوان مقاله:

A Heuristic Approach for Solving LIP with the Optional Feasible or Infeasible Initial Solution Points

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خلاصه مقاله:

An interactive heuristic approach can offer a practical solution to the problem of linear integer programming (LIP) by combining an optimization technique with the Decision Maker's (DM) judgment and technical supervision. This is made possible using the concept of bicriterion linear programming (BLP) problem in an integer environment. This model proposes two bicriterion linear programs for identifying a feasible solution point when an initial infeasible solution point is provided by the decision maker or when the searching process leaves the region of feasibility seeking for a better pattern to improve the objective function. Instructions regarding the structure of such BLP problems are broadly discussed. This added property offers a great degree of flexibility to the decision making problem solving process. The heuristic engine is comprised of four algorithms: Improve, Feasible, Leave, and Backtrack. In each iteration, when a selected algorithm has been terminated, the DM is presented with the results and asked to reevaluate the solution process by choosing an appropriate algorithm to follow. It is shown that the method converges to the optimal solution for most of the time. A solution technique for solving such a problem is introduced with sufficient details.

کلمات کلیدی:

Linear Programming, Integer Programming, Heuristic, Decision Making, and Interactive

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