A Novel Solution Approach using Linearization Technique for Nonlinear Programming Problems

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Abstract

In this paper, a novel solution approach for solving the nonlinear programming (NLP) problems having m nonlinear algebraic inequality (equality or mixed) constraints with a nonlinear algebraic objective function in n variables using linearization technique is presented. This approach performs successive increments to find a solution of the NLP problem, based on the optimal solutions of linear programming (LP) problems, satisfying the nonlinear constraints oversensitively. In the proposed approach, the original problem is converted to the LP problem using increments in the linearization process and the impact of computational efficiency makes the performance of the solution well. It is presented that how the solution approach can be applied to solve the illustrated examples from the literature.

References


**Index Terms**

Computer Science Software Engineering

**Keywords**

Linear Programming, Incremental Technique, Taylor Series, Linearization Algorithm