**A simple and efficient method for solving multi-objective programming problems and multi-objective optimal controls**

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**Abstract**

In this paper, a new approach based on weighted sum algorithm is applied to solve multi-objective optimal programming problems (MOOPP) and multi-objective optimal control problems (MOOCP). In this approach, first, we change the problem into a new one whose optimal solution is obtained by solving some single-objective problems simply. Then, we prove that the optimal solutions of the two problems are equal. Numerical examples are presented to show the efficiency of the given approach.