Abstract

In this paper, a multi-objective non-linear neutrosophic optimization (NSO) approach for optimizing the design of plane truss structure with multiple objectives subject to a specified set of constraints has been developed. In this optimum design formulation, the objective functions are the weight of the truss and the deflection of loaded joint; the design variables are the cross-sections of the truss members; the constraints are the stresses in members. A classical truss optimization example is presented here in to demonstrate the efficiency of the neutrosophic optimization approach. The test problem includes a three-bar planar truss subjected to a single load condition. This multi-objective structural optimization model is solved by neutrosophic optimization approach with linear and non-linear membership function. Numerical example is given to illustrate our NSO approach.

References


Index Terms

Computer Science Information Sciences

Keywords

Neutrosophic Set, Single Valued Neutrosophic Set, Neutrosophic Optimization, Structural model.