Abstract

Real world engineering problems are usually designed by the presence of many conflicting objectives. In this paper, an approach is developed to solve multi-objective structural design using parameterized t-norms and t-co-norms based intuitionistic fuzzy optimization technique. Here binary t-norms, t-conorms are extended in the form of n-ary t-norms and t-co-norms and their basic properties are discussed with some special cases. In this paper we have considered a multi objective structural optimization model with weight and deflection as objectives and stress as constraint function. Here design variables are considered as cross sectional area of bars. This classical truss optimization example is presented here in to demonstrate the efficiency of our proposed optimization approach. Numerical example is given here to illustrate this structural model through this approximation method.

References

Parameterized T-Norm and Co-Norm based Intuitionistic Fuzzy Optimization Technique and its Application

Systems 86, 299–306.


Index Terms

Computer Science  Fuzzy Systems

Keywords

Intuitionistic Fuzzy Set, T-norms, T-conorms, Structural Optimization.