

Abstract

A fuzzy set is a class of objects with a continuum of grades of membership.

Such a set is characterized by a membership characteristic function which assigns to each object a grade of membership ranging between zero and one >

The notions of union, intersection, complement, relation, convexity, inclusion, etc., are extended to such sets, and various properties of these notions in the context of fuzzy sets are established. In particular, a separation theorem for convex fuzzy sets is proved without requiring that the fuzzy sets be disjoint.