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STRUCTURES ON INTUITIONISTIC FUZZY T-IDEAL

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The notions of intuitionistic fuzzy T-ideals in BCI algebras are introduced. Conditions for an intuitionistic fuzzy ideal to be an intuitionistic fuzzy T-ideal are provided. Using a collection of T- ideals, intuitionistic fuzzy T- ideals are established.

Keywords

T-ideal, intuitionistic fuzzy sub- algebra,(closed) intuitionistic fuzzy ideal, intuitionistic fuzzy T-ideal.

1.Introduction

To develop the theory of BCI- algebras, the ideal theory plays an important role. Liu and Meng[6] introduced the notion of T-ideals and T-ideals in BCI algebras. Liu and zhang[7] discussed the fuzzification of T-ideals, gave relations between fuzzy ideals, fuzzy T-idealsand fuzzy p-ideals. They also considered characterizations of fuzzy T-ideals. Using the notion of fuzzy T-ideals,they provided characterization of associative BCI algebras. After the introduction of fuzzy sets by Zadeh[9], there have been a number of generalizations of this fundamental concept.The notion of intuitionistic fuzzy sets introduced by Atanassov[1,2] is one among them. In this paper, we apply the concept of intuitionistic fuzzy set to T-ideals in BCI- algebras. We introduce the notion of an intuitionistic fuzzy T-ideal of a BCI-algebra, and investigate some related properties. We provide relations between an intuitionistic fuzzy ideal and an intuitionistic fuzzy T-ideal. We give characterizations of an intuitionistic fuzzy T-ideal. Using a collection of T-ideals, we establish intuitionistic fuzzy T-ideals.

2. Preliminaries

Algebra (X,*,0) of type (2,0) is called a BCI-algebra if it satisfies the following conditions: