



NEUTROSOPHIC FUZZY (T, S) –NORMED MULTIPLY POSITIVE IMPLICATIVE BCC–IDEALS IN BCC–ALGEBRA

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Abstract. This study presents and analyzes the concept of (T, S) -Normed Neutrosophic Fuzzy Multiply Positive Implicative (NFMPI) BCC-ideals in the setting of BCC-algebras. We characterize this new class of ideals by employing both t -norms and t -conorms and derive several fundamental properties of these ideals. We show that at certain cut levels, the level sets obtained from the truth, indeterminacy, and falsity membership functions yield multiple positive implicative ideals. Furthermore, we establish that these ideals remain invariant under epimorphic mappings, thereby confirming their structural properties. The investigation is further expanded to the analysis of the direct product of BCC-algebras, demonstrating that the product of such ideals possesses NFMPI characteristics. These results enhance the comprehensive understanding of neutrosophic fuzzy structures in algebraic systems and create avenues for future research in this area.

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