Abstract

In this thesis, we introduce the concepts of fuzzy p-ideal and (α, β)-fuzzy p-ideal in a BF-algebra and investigate some of their related properties, where α, β are any one of $\in$, q_k, $\in \vee q_k$, $\in \wedge q_k$ unless otherwise specified. We also define the notion of $(\in, \in \vee q_k)$-fuzzy p-ideal in a BF-algebra. The concepts of implication-based fuzzy p-ideal and implication operators in Lukasiewicz system of continuous-valued logic in BF-algebra are introduced. Lastly, we also define the concept of $(\overline{\alpha}, \overline{\beta})$-fuzzy p-ideals in a BF-algebra, where $\overline{\alpha}$, $\overline{\beta}$ are any one of $\overline{\in}$, $\overline{q}_k$, $\overline{\in} \vee \overline{q}_k$, $\overline{\in} \wedge \overline{q}_k$ and investigate some of their related properties.