

ON BIPOLAR FUZZY SOFT HYPERLATTICES

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ABSTRACT

The paper we study covers several topics related to fuzzy sets and hyperlattices (HLs). Firstly, it begins by introducing the concept of fuzzy sets and how they differ from classical sets. Then goes on to discuss bipolar fuzzy (BF) sets, which extend the concept of fuzzy sets to define each element with a degree of positivity and a degree of negativity. Next, Fuzzy soft (FZS) sets, which combine the ideas of fuzzy sets and soft sets, are discussed. Soft sets are a generalization of classical sets that allow for elements to have degrees of membership. Fuzzy soft sets take this idea further by allowing for uncertainty in both the membership and non-membership of elements. The paper then turns its attention to HLs, which are a generalization of lattices that allow for the representation of more complex relationships between elements. Specifically, the paper focuses on fuzzy, soft hyperideals (HIDs) of HLs. HIDs are a generalization of the concept of ideals in algebra, and FZS HIDs allow for greater flexibility in the definition of these structures. The paper illustrates some examples of fuzzy soft HIDs in HLs. Finally, the paper introduces the concept of bipolar fuzzy soft (BFS) HIDs, which are a combination of HIDs and FZS HIDs in HLs.

Keywords Fuzzy soft set · Soft hyperideal · Bipolar fuzzy set · Bipolar fuzzy soft set · Bipolar fuzzy soft hyperlattices

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