

Bipolar fuzzy soft expert set and its application in decision making

Abstract

In this paper, we extend the two concepts of bipolar fuzzy sets and soft expert sets to bipolar fuzzy soft expert sets. We will define its basic theoretic operation, namely complement, union, intersection, AND and OR on bipolar fuzzy soft expert sets along with illustrative examples, and study some related properties with supporting proofs. The basic properties and relevant laws pertaining to this concept are proven. We then construct an algorithm based on this concept. Finally, we apply it to a decision-making problem to demonstrate the applicability of the proposed method. It is shown that this concept is effective in solving decision-making problems using an illustrative example.

Keywords: Bipolar fuzzy set; bipolar fuzzy soft set; soft expert set; decision making.

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