Fuzzy Implication Functions

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Description:

For more than a decade now, fuzzy implication functions have become one of the main research lines of the fuzzy logic community. These logical connectives are the generalization of the classical two-valued implication to the infinite-valued setting. In addition to modeling fuzzy conditionals, they are also used to perform backward and forward inferences in different fuzzy rule-based systems. Moreover, they have proved to be useful not only in fuzzy control and approximate reasoning but also in many other fields, such as Image Processing, Data Mining, and Computing with Words and Rough Sets, among others.

Due to this great variety of applications, fuzzy implication functions have attracted the efforts of many researchers from the points of view of both theory and applications. Indeed, the theoretical perspective focuses on problems whose solutions provide important insights from the point of view of their applications. Therefore, this special session seeks to bring together researchers interested in recent advances in the theory and the applications of fuzzy implication functions, concerning, among others, characterizations, representations, generalizations, and their relationships with fuzzy negations, triangular norms, uninorms, and other fuzzy logic connectives.