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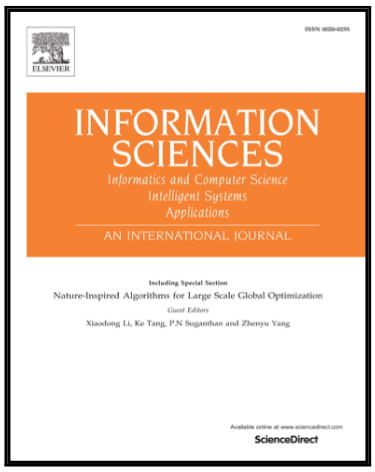

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ACCEPTED MANUSCRIPT

Application of Two Different Methods for Extending Lattice-Valued Restricted Equivalence Functions used for Constructing Similarity Measures on L-Fuzzy Sets

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Abstract

Based on previous investigations, we have proposed two different methods to extend lattice-valued fuzzy connectives (t-norms, t-conorms, negations and implications) and other related operators, considering a generalized notion of sublattices. Taking into account the results obtained and seeking to analyze the behavior of both extension methods in face of fuzzy operators related to image processing, we have applied these methods so as to extend restricted equivalence functions, restricted dissimilarity functions and $E_{e,N}$-normal functions. We also generalize the concepts of similarity measure, distance measure and entropy measure for L-fuzzy sets constructing them via restricted equivalence functions, restricted dissimilarity functions and $E_{e,N}$-normal functions.

Keywords: Fuzzy logic, restricted equivalence functions, retractions, extension, e-operators

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