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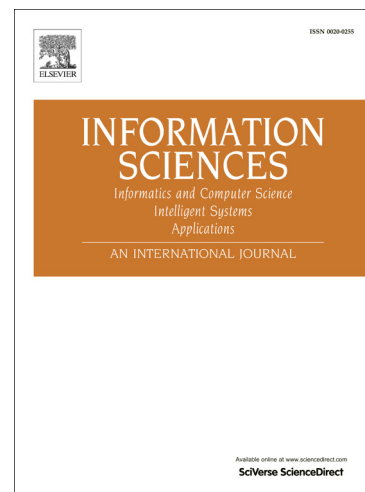
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Some new entropy measures for interval-valued intuitionistic fuzzy sets based on distances and their relationships with similarity and inclusion measures

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Abstract

A new axiomatical definition of entropy measure for interval-valued intuitionistic fuzzy set based on distance is firstly proposed, which is consistent with the axiomatical definition of fuzzy entropy introduced by De Luca and Termini. Then, we present some new entropy measures for interval-valued intuitionistic fuzzy sets (IvIFSs) and discuss their relationships with similarity measures and inclusion measures for IvIFSs. Also, we prove that the presented entropy measures, the similarity measures and the inclusion measures of IvIFSs can be transformed into each other by their axiomatical definitions. Finally, several numerical examples are given to demonstrate that the proposed new entropy measures for IvIFSs are more intelligible in representing the degree of fuzziness of IvIFSs than the existing ones.

Keywords:

Interval-valued intuitionistic fuzzy set, Entropy measure, Distance, Similarity, Inclusion measure

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