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Weighted multi-granulation method for information fusion in multi-source intuitionistic fuzzy decision information system. (Chinese. English summary) Zbl 07404446

Summary: Multi-source information systems are often used to represent complex data from multiple information sources. With the advent of the era of big data, information fusion has become a research hotspot of artificial intelligence. Many existing multi-source decision fusion methods select more reliable information from multi-source decision information system, but it will have information loss. In order to solve this problem, this paper proposes a weighted multi-granularity method for information fusion in multi-source intuitionistic fuzzy decision information system. The weighted generalized, weighted optimistic, weighted pessimistic fixed aggregation operator and possible aggregation operator, and the relevant properties and the relations among the three mixed operators are studied. Finally, an example is given to verify the effectiveness of the proposed method.

MSC:
68T09 Computational aspects of data analysis and big data
68U35 Computing methodologies for information systems (hypertext navigation, interfaces, decision support, etc.)
03E72 Theory of fuzzy sets, etc.

Keywords:
weighted multi-granulation method; decision support characteristic function; decision related characteristic function; fixed aggregation operator; possible aggregation operator