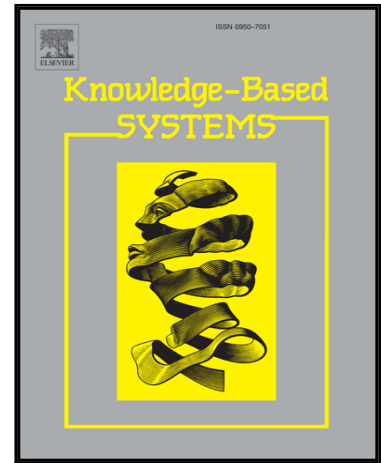


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Modeling complex linguistic expressions in qualitative decision making: An overview

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Abstract

The increasing complexity of real-world problems drives the experts to consider complex linguistic expressions instead of single linguistic terms to represent their linguistic opinions under uncertainties. Based on some classical linguistic representational models, a number of techniques of modeling complex linguistic expressions have been proposed. The main purpose of this paper is to present a systematical overview on these techniques, especially their focused linguistic expressions and the associated computational essentials. According to the features of the underlying linguistic expressions, the existing techniques are classified into two categories: the models of natural linguistic expressions, such as uncertain linguistic terms and hesitant fuzzy linguistic term sets, which focus on frequently used expressions in natural languages, and the models of artificial linguistic expressions, such as discrete fuzzy numbers and probabilistic linguistic term sets, which consider special types of expressions artificially constructed by linguistic terms and additional information. After the presentation of comparative analyses

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