

\mathcal{L} -FUZZY IDEALS OF RESIDUATED LATTICES

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Abstract

This paper mainly focuses on building the \mathcal{L} -fuzzy ideals theory of residuated lattices. Firstly, we introduce the notion of \mathcal{L} -fuzzy ideals of a residuated lattice and obtain their properties and equivalent characterizations. Also, we introduce the notion of prime fuzzy ideal, fuzzy prime ideal and fuzzy prime ideal of the second kind of a residuated lattice and establish existing relationships between these types of fuzzy ideals. Finally, we investigate the notions of fuzzy maximal ideal and maximal fuzzy ideal of a residuated lattice and present some characterizations.

Keywords: fuzzy ideal, fuzzy prime ideal, prime fuzzy ideal, fuzzy maximal ideal and maximal fuzzy ideal.

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