

## FOLDING THEORY OF IMPLICATIVE AND OBSTINATE IDEALS IN BL-ALGEBRAS

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### Abstract

In this paper, the concepts of  $n$ -fold implicative ideals and  $n$ -fold obstinate ideals in  $BL$ -algebras are introduced. With respect to this concepts, some related results are given. In particular, it is proved that an ideal is an  $n$ -fold implicative ideal if and only if is an  $n$ -fold Boolean ideal. Also, it is shown that a  $BL$ -algebra is an  $n$ -fold integral  $BL$ -algebra if and only if trivial ideal  $\{0\}$  is an  $n$ -fold obstinate ideal. Moreover, the relation between  $n$ -fold obstinate ideals and  $n$ -fold (integral) obstinate filters in  $BL$ -algebras are studied by using the set of complement elements. Finally, it is proved that ideal  $I$  of  $BL$ -algebra  $L$  is an  $n$ -fold obstinate ideal if and only if  $\frac{L}{I}$  is an  $n$ -fold obstinate  $BL$ -algebra.

**Keywords:**  $BL$ -algebra, ideal,  $n$ -fold implicative ideal,  $n$ -fold obstinate ideal.

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