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# NEW KINDS OF PREFILTERS IN EQ-ALGEBRAS

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**Abstract**

In this paper, the notions of $n$-fold positive implicative prefilter and $n$-fold implicative prefilter in $EQ$-algebras are introduced and several properties, characterizations and equivalent conditions are provided. It is proved that the quotient EQ-algebra induced by an $n$-fold positive implicative prefilter is $n$-idempotent. Also, it is proved that in an $n$-idempotent EQ-algebra, any filter is an $n$-fold positive implicative filter. In the sequel, we investigate the relationships between these two types of prefilters. Finally, some characterizations of $n$-fold implicative prefilters in bounded EQ-algebras are given.

**Keywords:** ($n$-idempotent) EQ-algebra, $n$-fold positive implicative prefilter, $n$-fold implicative prefilter.

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