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DISTRIBUTIVE LATTICES OF *t-k*-ARCHIMEDEAN SEMIRINGS*

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Abstract

A semiring S in $\mathbb{SL}^+$ is a t-k-Archimedean semiring if for all $a, b \in S$, $b \in \sqrt{Sa} \cap \sqrt{aS}$. Here we introduce the t-k-Archimedean semirings and characterize the semirings which are distributive lattice (chain) of t-k-Archimedean semirings. A semiring S is a distributive lattice of t-k-Archimedean semirings if and only if $\sqrt{B}$ is a k-ideal, and S is a chain of t-k-Archimedean semirings if and only if $\sqrt{B}$ is a completely prime k-ideal, for every k-bi-ideal B of S.

Keywords: k-radical, t-k-Archimedean semiring, completely prime k-ideal, semiprimary k-ideal.

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