

## ALL LINEAR-SOLID VARIETIES OF SEMIRINGS

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### Abstract

A variety of semirings is said to be solid if each of its identities is satisfied as hyperidentity. There are precisely four solid varieties of semirings. Each of them contains every derived algebra, where the both fundamental operations are replaced by arbitrary binary term operations. If a variety contains all linear derived algebras, where the fundamental operations are replaced by term operations induced by linear terms, it is called linear-solid. We prove that a variety of semirings is solid if and only if it is linear-solid.

**Keywords:** variety of semirings, hyperidentity, linear hypersubstitution, solid variety, linear-solid variety.

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