

Representation of distributive spatial lattices by congruence lattices of groupoids

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A lattice is *spatial* if every it's element is the join of completely join-irreducible elements. It's easy to check that every distributive spatial lattice is algebraic.

The famous result of Grätzer and Schmidt states that every algebraic lattice is isomorphic to the congruence lattice of some universal algebra. However, this is not true if we require the finiteness of the similarity type of the corresponding algebra. The question, does every distributive algebraic lattice isomorphic to the congruence lattice of some groupoid, remains open.

We show, that every distributive spatial lattice isomorphic to the congruence lattice of some groupoid, which satisfy identities $x^2 = 0$ and $xy = yx$ and has a property: it's congruence lattice isomorphic to it's ideal lattice.

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