Algebraic Lattices edit

Abbreviation: ALat

Definition 1. An *algebraic lattice* is a complete lattice $\mathbf{A} = \langle A, \bigvee, \bigwedge\rangle$ such that every element is a join of compact elements.

An element $c \in A$ is *compact* if for every subset $S \subseteq A$ such that $c \leq \bigvee S$, there exists a finite subset S_0 of S such that $c \leq \bigvee S_0$.

Morphisms. Let $\mathbf{A}$ and $\mathbf{B}$ be algebraic lattices. A morphism from $\mathbf{A}$ to $\mathbf{B}$ is a function $h : A \to B$ that is a complete homomorphism:

$h(\bigvee S) = \bigvee h[S]$ and $h(\bigwedge S) = \bigwedge h[S]$

Basic Results.

Examples.

1.

Properties. (description)

Classtype	second-order
Amalgamation property	yes
Strong amalgamation property	yes
Epimorphisms are surjective	yes

Subclasses.

Algebraic distributive lattices

Superclasses.

Complete lattices

Algebraic semilattices

References

[1]