Algebraic semilattices edit

Abbreviation: ASlat

Definition 1. An *algebraic semilattice* is a complete semilattice $\mathbf{P} = \langle P, \leq\rangle$ such that

the set of compact elements below any element is directed and

every element is the join of all compact elements below it.

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

The set of compact elements of P is denoted by $K(P)$.

Morphisms. Let $\mathbf{P}$ and $\mathbf{Q}$ be algebraic semilattices. A morphism from $\mathbf{P}$ to $\mathbf{Q}$ is a function $f : P \to Q$ that is *Scott-continuous*, which means that f preserves all directed joins:

$z = \bigvee D \implies f(z) = \bigvee f[D]$

Basic Results.

Examples.

1.

Properties. (description)

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

Finite Members. $f(n) =$ number of members of size n.

$f(1) = \ 1$

Subclasses.

Algebraic lattices

Superclasses.

Algebraic posets

References

[1]