

Commutative residuated partially ordered semigroups

edit

Abbreviation: CRPoSgrp

Definition 1. A *commutative residuated partially ordered semigroup* is a residuated partially ordered semigroup $\mathbf{A} = \langle A, \cdot, \rightarrow, \leq \rangle$ such that

\cdot is *commutative*: $xy = yx$

Remark: This is a template. If you know something about this class, click on the “Edit text of this page” link at the bottom and fill out this page.

It is not unusual to give several (equivalent) definitions. Ideally, one of the definitions would give an irredundant axiomatization that does not refer to other classes.

Morphisms. Let \mathbf{A} and \mathbf{B} be commutative residuated partially ordered monoids. A morphism from \mathbf{A} to \mathbf{B} is a function $h : A \rightarrow B$ that is an orderpreserving homomorphism: $h(x \cdot y) = h(x) \cdot h(y)$, $h(x \rightarrow y) = h(x) \rightarrow h(y)$, and $x \leq y \implies h(x) \leq h(y)$.

Definition 2. A ... is a structure $\mathbf{A} = \langle A, \dots \rangle$ of type $\langle \dots \rangle$ such that

... is ...: *axiom*

... is ...: *axiom*

Basic Results.

Examples.

1.

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

$$\begin{array}{ll} f(1) = 1 & f(6) = \\ f(2) = & f(7) = \\ f(3) = & f(8) = \\ f(4) = & f(9) = \\ f(5) = & f(10) = \end{array}$$

Subclasses.

Commutative residuated lattice-ordered semigroups expanded type

Superclasses.

Residuated partially ordered semigroups same type

Commutative partially ordered semigroups reduced type

REFERENCES

- [1] F. Lastname, *Title*, Journal, **1**, 23–45 MRreview

Properties. (description)

Feel free to add or delete properties from this list. The list below may contain properties that are not relevant to the class that is being described.

Classtype	quasivariety
Equational theory	
Quasiequational theory	
First-order theory	
Locally finite	
Residual size	
Congruence distributive	
Congruence modular	
Congruence n -permutable	
Congruence regular	
Congruence uniform	
Congruence extension property	
Definable principal congruences	
Equationally def. pr. cong.	
Amalgamation property	
Strong amalgamation property	
Epimorphisms are surjective	