Commutative Groupoids edit

Abbreviation: CBinOp

Definition 1. A *commutative groupoid* is a structure $\mathbf{A} = \langle A, \cdot \rangle$ where $\cdot$ is any commutative binary operation on A, i.e. $x \cdot y = y \cdot x$

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

$h(x \cdot y) = h(x) \cdot h(y)$

Basic Results.

Examples.

1.

Properties. (description)

Classtype	variety
Equational theory	decidable
Quasiequational theory	
First-order theory	undecidable
Locally finite	no
Residual size	unbounded
Congruence distributive	no
Congruence modular	no
Congruence n-permutable	no
Congruence regular	no
Congruence uniform	no
Congruence extension property	no
Definable principal congruences	no
Equationally def. pr. cong.	no
Amalgamation property	yes
Strong amalgamation property	yes
Epimorphisms are surjective	yes

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

$f(1) = 1$
$f(2) =$
$f(3) =$
$f(4) =$
$f(5) =$
$f(6) =$

Subclasses.
Commutative semigroups
Idempotent commutative groupoids
Commutative left-distributive groupoids

Superclasses.
Groupoids

References

[1]