

1014-06-1410

**Jeffrey S Olson\*** ([jsolson@math.uic.edu](mailto:jsolson@math.uic.edu)), Department of Math., Stat., and Comp. Sci.,  
University of Illinois at Chicago, 851 S. Morgan St., Chicago, IL 60607-7045. *Representable  
Idempotent Commutative Residuated Lattices.*

A commutative residuated lattice is an algebra  $\mathbf{A} = \langle A; \cdot, \rightarrow, \wedge, \vee, e \rangle$  such that  $\langle A; \cdot, e \rangle$  is a commutative monoid, and  $\rightarrow$  is the residual of  $\cdot$  in that it satisfies  $x \cdot y \leq z \iff y \leq x \rightarrow z$ . We call  $\mathbf{A}$  *idempotent* if it satisfies  $x \cdot x \approx x$ , and *representable* if it is a subdirect product of linearly-ordered commutative residuated lattices. Let **RICRL** denote the class of all representable, idempotent, commutative residuated lattices. **RICRL** is in fact a variety. We will discuss recent results for **RICRL**, including descriptions of the free algebras of **RICRL**. (Received September 28, 2005)