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W. Charles Holland* (charles.holland@colorado.edu). *Varieties of Lattice-Ordered Groups and Unital Lattice-Ordered Groups.*

A unital ℓ -group (G, u) is an ℓ -group G with an element $u \in G$ such that $e \leq u$, and for each $g \in G$ there exists a positive integer n such that $u^{-n} \leq g \leq u^n$.

I will talk about a couple of newly submitted papers on varieties (equationally defined classes) of ℓ -groups and unital ℓ -groups.

The Boolean variety \mathcal{B} of unital ℓ -groups is contained in every non-trivial variety of unital ℓ -groups. It has a covering layer of varieties, and uncountably many new ones of these have been discovered.

The abelian variety \mathcal{A} of ℓ -groups is also contained in every non-trivial variety of ℓ -groups. The metabelian variety \mathcal{A}^2 is all ℓ -groups of the form G with a convex normal sublattice subgroup H such that H is abelian, and G/H is abelian. This contains a large collection of varieties. A variety V is minimal non-metabelian if V is not metabelian, but every variety properly contained in V is metabelian. I will describe all minimal non-metabelian varieties which contain no totally ordered non-abelian ℓ -groups. (Received February 04, 2013)