

# Congruence lattices of Abelian lattice-ordered groups

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We discuss the problem to characterize the compact congruence lattices (equivalently, principal  $\ell$ -ideal lattices) of Abelian lattice ordered groups. Such a characterization has been known for countable lattices. Now we provide a characterization for lattices of cardinality  $\aleph_1$ . The main result says that a lattice of cardinality  $\aleph_1$  is isomorphic to the principal  $\ell$ -ideal lattice of some Abelian lattice ordered group if and only if the lattice is completely normal and has countably based differences.

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<sup>1</sup>Joint work with Friedrich Wehrung