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TOLERANCE RELATIONS AND A COMMUTATOR ON A COMPLETE LATTICE

Abstract

The key result is a characterization of transitivity of tolerances $\tau_{(a_1, \dots, a_n)}$ definable by a commutator on a complete lattice. For an algebra A in a congruence modular variety it can be shown that $a \in \text{Con}A$ is nilpotent iff the transitive hull of tolerance relation $\tau_{(a, a, \dots, a)}$ contains the principal congruence $Cg_{\text{Con}A}(0, a)$.