Reilly, Norman R.

Nilpotent, weakly Abelian and Hamiltonian lattice ordered groups. (English) Zbl 0553.06020

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Let $\mathcal{C}$ be the variety of lattice ordered groups defined by the law $[x, x^y] = 1$ and let $\mathcal{W}$ be the weakly abelian variety defined by $(x \vee 1)^y \leq (x \vee 1)^2$. Let $\mathcal{H}$ be the class of all lattice ordered groups for which each convex ℓ-subgroup is normal - this Hamiltonian class is not a variety. For a variety $\mathcal{V}$ of ℓ-groups it is shown that $\mathcal{V} = \mathcal{W}$ iff $\mathcal{V} \leq \mathcal{H}$, so $\mathcal{W}$ is the largest variety of Hamiltonian ℓ-groups. Each nilpotent ℓ-group belongs to $\mathcal{W}$. If G is an o-group with only a finite number of regular subgroups and $G \in \mathcal{W}$ then G is nilpotent. The variety $\mathcal{C}$ is the variety of nilpotent groups of class at most two.

Reviewer: P.F.Conrad

MSC:

06F15 Ordered groups
20F60 Ordered groups (group-theoretic aspects)
20E10 Quasivarieties and varieties of groups

Keywords:

variety of lattice ordered groups; weakly abelian variety; convex ℓ-subgroup; Hamiltonian class; variety of Hamiltonian ℓ-groups; nilpotent ℓ-group; regular subgroups; variety of nilpotent groups

Full Text: EuDML

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