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Introduction to the Lascar group. (English) [Zbl 1042.03029]


The author gives a short introduction to the Galois group associated by Lascar to any complete first-order theory [D. Lascar, J. Symb. Log. 47, 249–266 (1982; Zbl 0498.03019)], which avoids ultraproducts, but instead makes use of thick formulas: formulas $\theta(x, y)$ which do not contain an infinite antichain.

The Lascar Galois group $\text{Gal}(T)$ is the quotient of the automorphism group of any big saturated model of $T$ by the normal subgroup generated by the pointwise stabilizers of elementary submodels of $M$; it does not depend on $M$, and carries a natural quasicompact topology turning it into a topological group. It has two canonical normal subgroups: $\Gamma_1(T)$, the closure of $\{1\}$, which is the set of elements fixing all bounded hyperimaginaries, and $\text{Gal}^0(T)$, the connected component of $1$, which is the set of elements fixing all algebraic imaginaries. Moreover, any compact group arises as Galois group of a complete first-order theory.

For the entire collection see [Zbl 1012.00035].

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MSC:

03C60 Model-theoretic algebra
20B27 Infinite automorphism groups
03C45 Classification theory, stability, and related concepts in model theory
22A05 Structure of general topological groups

Cited in 9 Documents

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Lascar Galois group; Lascar strong type; thick formula; topological group; compact group