

INSALATE DI MATEMATICA

presents

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Measuring torsion in some pro- p groups



Abstract:

Many properties of a group G can be expressed by saying that it satisfies an equation $w(x_1, \dots, x_k) = 1$. For example, G is abelian if and only if it satisfies the commutator equation $w(x, y) = 1$ where $w(x, y) = x^{-1}y^{-1}xy$. On the other hand, since we can often turn a group into a probability space, it is interesting to measure how big/small is the subset of elements satisfying a given equation. In this talk, we will discuss this kind of problems for finite and profinite groups and, using Lie theoretic methods, we will show that the set of torsion elements in some pro- p groups has Haar measure zero.

Keywords: profinite groups · word maps · probabilistic identities

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*"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)*