

Insalate di Matematica

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Representation growth of semisimple profinite groups

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Abstract

A profinite group is called semisimple if it is the Cartesian product of finite simple groups. The representation growth of such groups can be studied looking at the distribution of irreducible representations by means of a zeta function, that is a Dirichlet generating function. Under certain restrictions, the representation growth is polynomial with a wide range of growth.

Moreover, given a profinite group, it is generally a difficult question to determine if it is, in fact, isomorphic to a profinite completion of an abstract group. In this talk, I discuss a result of Kassabov and Nikolov which provides a criteria for a semisimple profinite group to be a profinite completion. Based on this, I report on my work which is aimed at constructing semisimple profinite groups with specified polynomial representation growth that arise as profinite completions of abstract groups (with the same representation growth).



Keywords:

Semisimple profinite groups · Representation growth · Profinite completion

"Obvious" is the most dangerous word in mathematics. - Eric Temple Bell