Twisted conjugacy classes in residually finite groups

Evgenij Troitsky

Moscow State University, Russia
troitsky@mech.math.msu.su

The talk is based on the joint works with A. Fel'shtyn, [1, 2, 3].

Session: 35. Topological fixed point theory and related topics

In this talk we will discuss the following statements:

1. the number of twisted conjugacy classes (Reidemeister number) of an automorphism ϕ of a finitely generated residually finite group is equal (if it is finite) to the number of finite dimensional irreducible unitary representations being invariant for the dual of ϕ ;

2. any finitely generated residually finite non-amenable group has the R_∞ property (i.e. any automorphism has infinitely many twisted conjugacy classes). This gives a lot of new examples and covers many known classes of such groups;

Some generalizations and related examples will be discussed, in particular, examples for non-finitely generated groups. Also we plan to discuss the state of the following our, two year old
Conjecture: a finitely generated, residually finite, non-R_∞-group is solvable-by-finite.

References

[1] A. Fel'shtyn and E. Troitsky, Twisted Burnside-Frobenius theory for discrete groups, J. reine Angew. Math., 613 (2007), 193–210.

[2] A. Fel'shtyn and E. Troitsky, Geometry of Reidemeister classes and twisted Burnside theorem, J. K-Theory, 2 (2008), 463–506.

[3] A. Felshtyn and E. Troitsky, Twisted conjugacy classes in residually finite groups, arXiv:1204.3175v2, 2012.