1017-20-60   **Alexander Fel'shtyn*** (`felshtyn@diamond.boisestate.edu`) and **Evgenij Troitsky** (`troitsky@mech.math.msu.su`). *Twisted Burnside-Frobenius theory for infinite groups.*

It is proved for a wide class of groups including polycyclic and finitely generated polynomial growth groups that the Reidemeister number of an endomorphism is equal to the number of finite-dimensional fixed points of the dual map on the unitary dual, if one of this number is finite. This theorem is a natural generalization to infinite groups of the classical Burnside-Frobenius theorem. On the other hand it has important consequences in topological dynamics. In some sense our theorem is a reply to a remark of J.P.- Serre. (Received February 10, 2006)