TEST ELEMENTS AND RETRACTS OF DISCRETE GROUPS AND PRO-p GROUPS

SLOBODAN TANUSEVSKI
UNIVERSITY FEDERAL FLUMINENSE.

Abstract:

An element g of a group G is called a test element if every endomorphism of G that fixes g is an automorphism. The notion of a test element was introduced by Vladimir Shpilrain as a way of organizing a plethora of hitherto scattered results into a general conceptual framework.

In many groups, the set of test elements coincides with the complement of the union of all proper retracts of the group. This complementary relation between retracts and test elements was first discovered by Edward Turner.

In this talk, I will discuss test elements and retracts in pro-p groups. I hope to convince you that test elements, and several other related concepts, have a significant role to play in the theory of pro-p groups. In addition, I will present several results on retracts and test elements of discrete groups obtained by means of pro-p techniques.

The talk is based on several joint papers with Ilir Snopce and a joint paper with Ilir and Pavel Zalesski.