I M B M istanbul matematiksel bilimler merkezi
istanbul center for mathematical sciences

Problems of bounding the p-length and Fitting height of finite soluble groups

E. I. Khukhro

Sobolev Institute of Mathematics, Novosibirsk

Abstract

In this talk we make a survey of some open problems and recent results about bounding the Fitting height and p-length of finite soluble groups. In many problems of finite group theory, nowadays the classification greatly facilitates reduction to soluble groups. Bounding their Fitting height or p-length can be regarded as further reduction to nilpotent groups. This is usually achieved by methods of representation theory, such as Clifford's theorem or theorems of Hall–Higman type. In some problems, it is the case of nilpotent groups where open questions remain, in spite of great successes achieved, in particular, by using Lie ring methods. But there are also important questions that still require reduction to nilpotent groups, which is the focus of this talk. As examples, we discuss finite groups with fixed-point-free and almost fixed-point-free automorphisms, generalizations of the Restricted Burnside Problem, and coset identities appearing in the study of profinite groups. Time permitting, we shall mention the open problem of bounding the Fitting height in the study of the analogue of the Restricted Burnside Problem for Moufang loops.

Date : Monday, February 3, 2014

Time: 14:00

Place: IMBM Seminar Room, Boğaziçi University South Campus