Topological and Geometric Methods in Group Theory

Organised by
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Abstract. The focus of this meeting was the use of topological and geometric methods to study infinite discrete groups. These methods are increasingly being supplemented by powerful new techniques from analysis. Key topics included group actions on CAT(0) and tree-like spaces, filling invariants, cohomology, K-theory and $\ell^2$-cohomology, amenability and Kazhdan’s property (T), and deformation spaces, curve complexes and Teichmüller space.

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Introduction by the Organisers

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The meeting was organized around a series of 23 lectures each of 50 minutes’ duration representing the major recent advances in the area. The first day’s lectures were selected from the abstracts and talk proposals which had been submitted in advance of the meeting, and the remainder were decided on Monday and Tuesday morning; in this way we were able to take advantage of a full range of abstracts and also to incorporate last-minute information about exciting developments in the field. We had interesting proposals from virtually every participant but lecture slots for fewer than half to speak. We posted all abstracts on the wall of the lecture building and drew attention to them by running a poster event on Tuesday evening, at which every participant took the opportunity to introduce their
research and poster. This worked very effectively and was valuable especially to younger people or those visiting the Forschungsinstitut for the first time. It also led to small groups getting together for unofficial lecture sessions in the evening and afternoon breaks on subsequent days.

There were 51 participants from a wide range of countries, including Germany, France, the United States, the United Kingdom, Greece, Russia, Poland, Switzerland and Australia. We are grateful to the European Union, which provided funds to support 6 advanced graduate students, a number of recent Ph. Ds and a few senior researchers.

We feel that the meeting was exciting and highly successful. The quality of the lectures was outstanding, and outside of lectures there was a constant buzz of intense mathematical conversations. One indication of the high degree of current activity and interest in the subject is the fact that four of the participants (including two of the organizers) have been invited to speak at the upcoming International Congress of Mathematicians in Madrid.