

Mathematical Colloquia

Monday, 30 October 2017

17:15 h, Lecture Room B 78

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Geometry of finite quotients of groups

Abstract:

In order to study a finitely generated group, one may want to visualize the group by drawing a suitable graph called a Cayley graph. One can then exploit the connections between group-theoretic properties and geometric properties of the graph. This area of mathematics, called geometric group theory, has been a fruitful and active area of research ever since Gromov's astounding polynomial growth theorem of 1981.

If the set of quotients of the group is sufficiently rich, one can instead study a metric space made out of friendlier, finite objects: namely, the Cayley graphs of finite quotients of the group. Such metric spaces are good sources of examples with interesting and often surprising properties in coarse geometry. In this talk, we will describe some results in this direction, and then give some new results which use coarse topological methods in order to investigate geometric rigidity of finite quotients of groups.