

# Probabilistic and dynamical aspects of left-orderable groups

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The theory of (left-)orderable groups is a venerable subject in algebra which has been extensively developed during the last century. In recent years, the discovery of many new examples of orderable groups (braid groups, the fundamental groups of certain hyperbolic 3-manifolds), as well as the question of knowing whether certain groups are orderable or not (higher rank lattices in simple Lie groups, groups with Kazhdan's property (T)), have attracted the interest to the subject of people coming from different branches of mathematics. Moreover, the introduction of new techniques in the field –mainly dynamical, analytic and probabilistic– have given new insights to the theory.

In this mini-course I will concentrate on recent developments of the theory. Some of the topics to be treated are:

- The topological counterparts of left-orderability and spaces of orderings of left-orderable groups.
- The dynamical counterpart of Conrad-orderability, local indicability, and a theorem of Morris-Witte.
- An elementary approach to braid orderings, and new examples of groups having orderings whose positive cone is finitely generated.
- Geometric and isoperimetric profiles of left-orderable groups, and a theorem of Gromov.

## References

A series of (electronic) Notes with the same title as the mini-course will be available during the Congress.