

MEASURABLE GROUP THEORY

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Measurable group theory aims at understanding how much of the structure of a countable group can be recovered solely from the equivalence relation of "being in the same orbit", induced by a measure preserving action of the group. It turns out that for some groups almost all of their structure is lost, while for others, the opposite happens (to the extent that sometimes both the group and the action can be entirely reconstructed from the equivalence relation).

This theme, which is a common playground for descriptive set theory, operator algebra, and ergodic theory, has seen remarkable developments in the last 5 years, involving deep tools coming from diverse directions. It may also be viewed as the "measurable younger brother" of geometric group theory – a point of view (due to Gromov) which turns out to be fruitful for both theories. In the talk we shall describe some of the recent developments and ideas involved in this emerging and exciting area.

The talk will be completely self-contained, and should be accessible to a very general audience.