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**UNIVERSITÄT
BERN**

Philosophisch-
naturwissenschaftliche Fakultät

Departement Mathematik und Statistik

Mathematisches Institut

Mathematical Colloquia

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Monday, 21 November 2022

17:15 h, lecture room B6 (ExWi)

Dr. Gabriel Pallier, Karlsruher Institut für Technologie

Looking at Lie groups through Gromov's telescope

Over the last four decades, the study of groups via geometric and analytic techniques has seen considerable development. It was notably motivated by the following question (that I shall make precise in the talk): can we distinguish groups (within some classes) by looking at them from infinitely far away?

This is relevant especially for Lie groups, which have attracted the attention of geometers and analysts for even longer, and thanks to many contributions to the aforementioned Gromov program we now have a collection of invariants (most of them reminiscent of the traditional objects of differential geometry, topology, and analysis) to detect if two groups are the same or not by looking at their large-scale structures. In the talk I will review some of these invariants, and explain what is known and expected for the classification of solvable Lie groups, with many examples.