

Mathematics Colloquium

21 May
16h15

Room: 1-15
Section of mathematics
rue du Conseil-Général 7-9



Wolfgang Lück

(University of Bonn)

A panorama of L^2 invariants

Betti numbers of closed manifolds or finite simplicial complexes are classical invariants in algebraic topology. Atiyah proposed an L^2 version obtained from the universal covering and the action of the fundamental group using von Neumann algebras.

We will present the basic properties of these L^2 -Betti numbers without going into technical details and discuss interesting and striking applications to topology, algebra, group theory, and geometry which are both interesting for and easy to explain to a general audience. If time allows, we will also introduce L^2 -torsion which is the analogue of the classical Reidemeister torsion.

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