

Bounded cohomology, cohomology with bounded values and d-bounded cohomology

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Abstract: Let G be a group. Gromov and Gersten defined the bounded cohomology of G and the cohomology of G with bounded values, respectively. Bounded cohomology maps into ordinary cohomology, and ordinary cohomology maps into cohomology with bounded values, and it is known that the composition of these maps is always null. In this talk we investigate the question whether this sequence of maps is exact at ordinary cohomology.

In degree 2, this question is closely related both to the classification of quasi-isometrically trivial central extensions of finitely generated groups, and to a long-standing conjecture by Gromov on the growth of primitives of differential 2-forms on closed Riemannian manifolds. Joint work with Alessandro Sisto.