Continuous bounded cohomology, representations and multiplicative constants

Speaker: Alessio Savini

Abstract: Given a torsion-free lattice $\Gamma \leq G$ in a simple Lie group of non-compact type, one of the main problems in the theory of geometric structures is to understand the space of representations $\rho : \Gamma \to H$ into a locally compact group.
Surprisingly continuous bounded cohomology is a powerful tool in this kind of investigation. Indeed, under suitable hypothesis, one can exploit bounded cohomology techniques to define a numerical invariant associated to each representation. Such an invariant is called multiplicative constant and it usually has bounded absolute value. Representations which maximize their multiplicative constant are called maximal and they define a nice subset of the representation space.

In this talk we are going to define the notion of multiplicative constant and to study some applications like the Euler invariant and the Volume invariant.