Oberseminar Topologie: 16.06.2021

Mikala Oersnes Jansen (Universität Kopenhagen)

„The reductive Borel-Serre compactification and unstable algebraic K-theory “

Abstract:
The reductive Borel-Serre compactification, introduced by Zucker in 1982, is a stratified space which is well-suited for the study of L2-cohomology of arithmetic groups and which has come to play a central role in the theory of compactifications of locally symmetric spaces. We determine its stratified homotopy type (exit path ∞-category) to be a 1-category defined purely in terms of parabolic subgroups, their unipotent radicals and a conjugation action. This category makes sense in a much more general setting; in fact, we can associate such a category to any ring R and any integer n and interpret it as a "compactification" of GLn(R). We propose these categories as models for unstable algebraic K-theory and investigate them in detail for finite fields and commutative local rings with infinite residue field. This is joint work with Dustin Clausen.