Leibniz Universität Hannover

Oberseminar Zahlentheorie und arithmetische Geometrie

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(Hannover)

Hecke operators and K-homology of arithmetic groups

Cohomology of arithmetic groups and its structure as a Hecke module plays a prominent role in modern number theory. Classically the cohomology of an arithmetic group \Gamma can studied geometrically through its action on the associated global symmetric space X. In low dimensions, such actions produce non-compact hyperbolic manifolds as quotient spaces, as well as dynamically complicated actions on the boundary of X. In recent joint work with Haluk Sengun (Sheff eld), we show that the cohomology of \Gamma, as a Hecke module, can be captured by the K-groups of a certain noncommutative C*-algebras which encode the action of \Gamma on X as well as its the boundary. The Hecke operators can be rigidly def ned as explicit classes in KK-theory, acting on the relevant K-groups in a way compatible with Morita equivalence and boundary maps. This provides a uniform framework to study the K-homology of arithmetic groups. In the talk I will not assume any knowledge of K-homology and discuss the necessary concepts along the way.

Donnerstag, 26.01.2017, 12:00 – 13:00, g117

Alle Interessierten sind herzlich eingeladen.