SYLLABUS DEL CORSO

Cohomology and Geometry of totally disconnected locally compact groups

2021-105R-Coho-Geometry

Title

Cohomology and Geometry of totally disconnected locally compact groups

Teacher(s)

Ilaria Castellano

Language

English

Short description

The aim of this course is to introduce you to a trendy line of research in topological group theory: <u>geometric group theory for totally disconnected locally compact (= TDLC) groups.</u>

With the solution of <u>Hilbert's fifth problem</u>, a structure theory of TDLC-groups became the missing piece in the theory of locally compact groups and, since then, it plays a central role.

The class of TDLC-groups contains such an "infinity" of objects (often arising from very different contexts) that

makes it is difficult to find a unique mathematical perspective able to describe the whole class. I plan to offer you an overview on several geometric invariants that can be "attached" to TDLC-groups and that can be used to divide the infinity of objects into subclasses of "objects of the same type" (one expects these subclasses to be more amenable than the whole). This plan will lead us to use some typical tools from geometric group theory: group cohomology, finiteness conditions, CW-complexes, hyperbolicity and the ends of groups.

CFU / Hours

28 hours

Teaching period

March - May 2021