

Lectures by Michel Boileau

Lecture 1 : Profinite completions of finitely generated groups

The goal of the first lecture is to introduce the notion of profinite completion of a group. This is a way to encode all finite quotients of the group. We will focus on finitely generated and residually finite groups. We will discuss the rigidity problem, that is to say when the profinite completion determines the group. In particular we will consider the case of 3-manifold groups.

Lecture 2 : Profinite completions of 3-manifold groups

In this lecture we will discuss which properties or invariants of a compact 3-manifold can be detected by the profinite completion of its fundamental group, for example the geometric structures, the simplicial volume, the Thurston norm, the fiberness...

Lecture 3 : Profinite completions of knot groups

In this lecture we will be concerned with the case of knot complements in the 3-sphere. We will discuss to what extent does the profinite completion of a knot group distinguish knots.