PROFINITE RIGIDITY AND THE SECOND HOMOLOGY GROUP

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Time: Fri, May. 29th, 16:30 - 17:30
Venue: Room 102, SCMS

Abstract:

A finitely generated residually finite group is said to be profinitely rigid if it is determined in the class of finitely generated residually finite groups by its set of finite quotients. Much remains unknown: for example, it is an open problem whether free groups are profinitely rigid. In the past few years, much progress has been made on constructing examples of profinitely rigid groups, with a landmark paper by Bridson, McReynolds, Reid, and Spitler producing examples of profinitely rigid hyperbolic 3-manifold groups. In recent work, Bridson & Reid have used a technique via fiber products due to Bass & Lubotzky for constructing failures of profinite rigidity (in the form of "Grothendieck pairs") which relies on being able to guarantee the vanishing of the second homology group of some hyperbolic 3-orbifold groups. In my talk, I will give an introduction to this fascinating blend of areas. I will also give a sketch of an algorithmic procedure for computing the second homology group of any hyperbolic 3-orbifold covered by a rational homology 3-sphere, and a useful criterion, both of which can be used to answer two questions of Bridson & Reid.