

The Classification of One Relator Limit Groups

Abstract

Limit groups are finitely generated fully residually free groups. This class has played a major role in the solution of the celebrated Tarski problems. An open question is the full classification of those one-relator groups that are limit groups. All limit groups are CSA groups and hence commutative transitive. In this talk we discuss the classification of one-relator CSA and one-relator commutative transitive groups and tie these to certain other properties such as being RG or not containing a Baumslag-Solitar group. In the talk we will also touch on certain other related problems such as the **surface group conjecture** and a conjecture of Gromov as related to hyperbolic Baumslag doubles. We will also briefly discuss how all hyperbolic limit groups have faithful representations in $PSL(2, \mathbb{C})$.