Jens Harlander* (jens.harlander@wku.edu), Mathematics Dept., Western Kentucky University, 1 Big Red Way, Bowling Green, KY 42101, and Jacqueline Jensen (jensen@shsu.edu), Mathematics Dept., Sam Houston State University, Huntsville, TX 77341. On the homotopy classification of aspherical groups. Preliminary report.

Given a finitely presented group G and an integer n the objective is to classify all finite 2-complexes (up to homotopy) with fundamental group G and Euler characteristic n. This program has been completely carried out for finite groups by Wes Browning in the late 1970s. In particular he showed that there is a unique homotopy type on non-minimal Euler-characteristic levels. The situation is different for infinite groups. Martin Dunwoody showed in 1980 that the trefoil groups admits different homotopy types on the (minimal+1)-level. Later Martin Lustig could show that there are indeed infinitely many different homotopy types on that level.

In general homotopy classification is wide open when the fundamental group is infinite. The situation seems more approachable however for aspherical groups where the classification program boils down to understanding stably free projective modules over the group algebra.

In my talk I will revisit Dunwoody's and related examples, present results and basic open questions. (Received February 22, 2005)