1075-20-223 **Ross Geoghegan*** (ross@math.binghamton.edu). *The fundamental group at infinity.*

The fundamental group at infinity is an interesting invariant of finitely presented (f.p.) groups. In this talk I will review the "semistability problem" and its homological analog. I will mainly emphasize recent progress in joint work with Craig Guilbault. Theorem: Let G be a one-ended f.p. group having an element of infinite order; then G is either simply connected at infinity, or is virtually a surface group, or the fundamental group at infinity of G is not pro-monomorphic. The method of proof, when combined with previous work of Guilbault, has topological consequences. For example, let M be a closed aspherical n-manifold whose universal cover is not $\mathbb{R}^n$ (e.g. via Davis); any non-trivial covering transformation in G has mapping torus homeomorphic to $\mathbb{R}^n \times S^1$ (while, of course, the mapping torus of the trivial element is $M \times S^1$.) (Received August 30, 2011)