Meeting: 999, Nashville, Tennessee, SS 5A, Special Session on Topological Aspects of Group Theory

999-20-95 **Allen Hatcher** and **Karen Vogtmann*** (vogtmann@math.cornell.edu), Department of Mathematics, Malott Hall, Cornell University, Ithaca, NY 14853-4021. *Homology stability for outer automorphism groups of free groups.* Preliminary report.

We prove that the quotient map from the automorphism group to the outer automorphism group of the free group of rank n is an isomorphism on homology in dimension i for n at least $2i + 4$. This corrects an earlier flawed proof by the first author and greatly improves the stability range. In the course of the proof, we also prove homology stability for a sequence of groups which are natural analogs of mapping class groups of surfaces with boundary. In particular, this leads to a slight improvement on the known stability range for $\mathrm{Aut}(F_n)$, showing that its ith homology is independent of n for n at least $2i + 2$. (Received August 15, 2004)