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

999-55-286 **Michael R Kelly*** (kelly@loyno.edu). *Graph representatives and free group endomorphisms.*

Let $\phi : F \to F$ be a homomorphism of the finitely generated free group F. Consider a compact surface S whose fundamental group is isomorphic to F and a map $f : S \to S$ such that the induced map on $\pi_1(S)$ is conjugate to ϕ. We consider the problem of finding a geometric representative for ϕ; a nice graph map which carries the minimal number of fixed points possible among all self-maps homotopic to f.

The dependence on S is illustrated by the following two results for the free group on two generators. For the pants surface the existence of a representative such that the graph embeds as a homotopy equivalence is established. On the other hand, we show that for the compact once punctured torus there exists a ϕ for which no such representative exists. (Received August 26, 2004)