

Geometric Group Theory/Théorie géométrique des groupes

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Stable homology of automorphism groups of free groups

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Abstract

There is a natural homomorphism $S_n \rightarrow \text{Out}(F_n)$ from the symmetric group to the outer automorphism group of a free group. I will sketch a proof that this induces an isomorphism $H_k(S_n) \rightarrow H_k(\text{Out}(F_n))$ in group homology, when n is large compared to k . It uses that the classifying space $B\text{Out}(F_n)$ can be thought of as a moduli space of graphs, and tries to do something similar to what Madsen–Weiss did to the moduli space of Riemann surfaces.