

1071-57-118

**Thomas Koberda\*** ([koberda@math.harvard.edu](mailto:koberda@math.harvard.edu)), Department of Mathematics, 1 Oxford St., Cambridge, MA 02138. *Mapping classes, finite covers and large hyperbolic 3-manifolds*. Preliminary report.

We will consider a Torelli mapping class  $\psi$  on a surface  $\Sigma$  and examine its action on the real homology of each finite abelian cover of  $\Sigma$ . We will see that either there is a finite abelian cover  $\Sigma'$  of  $\Sigma$  where  $\psi$  acts with spectral radius strictly larger than one on  $H_1(\Sigma', \mathbb{R})$ , or the suspension of the mapping class  $M_\psi$  is a 3-manifold with a large fundamental group. It follows that if  $\psi$  is in the Magnus kernel,  $\pi_1(M_\psi)$  is always large. (Received February 27, 2011)