1019-57-82 **Stanislav Jabuka*** (jabuka@unr.edu), Department of Mathematics and Statistics, 084, University of Nevada Reno, Reno, NV 89557, and **Swatee Naik** (naik@unr.edu), Department of Mathematics and Statistics, 084, University of Nevada Reno, Reno, NV 89557. *Floer homology and knot concordance order.*

A knot K in the 3-sphere is said to be smoothly slice if it bounds and smoothly embedded disk in the 4-ball. We say that two knots K and L are concordant if K#(-L) is slice where -L is the mirror image of L. The set of equivalence classes of concordant knots with the operation of connected sums forms an Abelian group C called the concordance group.

The talk will focus on the existence/absence of torsion elements in C. It is easy to find 2-torsion elements: given any knot K, K#(-K) is always slice and so any amphichiral non-slice knot has order 2. But p-torsion for p>2 is still elusive.

We will present a new obstruction for a knot K to have order p in C. This obstruction arises from Heegaard Floer homology by means of considering double branched covers of S^3 over the said knot and the restrictions these 3-manifolds have to satisfy if K has order p. As an application we work out some of the unknown concordance orders of knots up to 10 crossings. This is joint work with Swatee Naik. (Received August 07, 2006)