

1104-57-208

**Kyle Larson** and **Jeffrey Meier\*** (jlmeier@indiana.edu), Department of Mathematics, Rawles Hall, 831 East Thrid St., Bloomington, IN 47405. *Fibered disks and 2-knots.*

Classical work of Casson-Gordon and Cochran give characterizations of fibered, homotopy-ribbon 1-knots and 2-knots, respectively. We investigate the relationship between these two characterizations by studying fibered, homotopy ribbon disk-knots. The overall approach is to study these objects by analyzing changes to their monodromies in terms of various surgeries on the total space. To that end, we give analogues of the Stallings twist for fibered disk knots and fibered 2-knots.

These techniques allow us to produce infinite families of distinct disk knots that all double to at most two distinct fibered, homotopy-ribbon 2-knots. Conversely, we see that a given fibered, homotopy-ribbon 2-knot has, as symmetric equators, infinitely many distinct fibered, homotopy-ribbon 1-knots. We will illustrate these ideas using the examples arising from spinning fibered 1-knots, and show that the spins of any two fibered 1-knots can be related by a sequence of torus surgeries.

This is joint work with Kyle Larson. (Received September 01, 2014)