1083-57-189 **Susan Abernathy***, sabern1@tigers.lsu.edu. *On Krebes' tangle.*

A genus-1 tangle $\mathcal{G}$ is an arc properly embedded in a standardly embedded solid torus S in the 3-sphere. We say that a genus-1 tangle embeds in a knot $K \subseteq S^3$ if the tangle can be completed by adding an arc exterior to the solid torus to form the knot K. We call K a closure of $\mathcal{G}$. An obstruction to embedding a genus-1 tangle $\mathcal{G}$ in a knot is given by torsion in the homology of branched covers of S branched over $\mathcal{G}$. We examine a particular example $\mathcal{A}$ of a genus-1 tangle, given by Krebes, and consider its two double-branched covers. Using this homological obstruction, we show that any closure of $\mathcal{A}$ obtained via an arc which passes through the hole of S an odd number of times must have determinant divisible by three. A resulting corollary is that if $\mathcal{A}$ embeds in the unknot, then the arc which completes $\mathcal{A}$ to the unknot must pass through the hole of S an even number of times. (Received August 27, 2012)