

1052-57-21

**Douglas J LaFountain\*** (DJL2@BUFFALO.EDU), 244 Mathematics Building, University at Buffalo, Buffalo, NY 14260. *Contact structures and the uniform thickness property.*

We relate a contact topological property of fibered knot types embedded in  $S^3$  to isotopy classes of contact structures supported by open book decompositions associated to those knots. Specifically, we study the uniform thickness property (UTP); a knot type satisfies the UTP if any embedded solid torus representing that knot thickens outward in a uniform way with respect to the standard contact structure. The UTP is of interest in part because failure of the UTP can lead to knot types which are transversally non-simple, meaning their Legendrian and transversal isotopy classes fail to be classified by classical invariants.

We prove that for the class of iterated torus knots, a knot type fails the UTP if and only if its supported contact structure is the standard one. This result extends and builds upon the work of Etnyre-Honda and Hedden. We then conjecture ways this relationship may extend to general fibered knots, as well as to bindings of open book decompositions of general contact 3-manifolds. (Received July 05, 2009)