Topology Colloquium

Contact geometry, open books and monodromy

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Abstract: Recall that an open book decomposition of a 3-manifold M is a link L in M whose complement fibers over the circle with fiber a Seifert surface for L. Giroux's correspondence relates open book decompositions of a manifold M to contact structures on M. This correspondence has been fundamental to our understanding of contact geometry. An intriguing question raised by this correspondence is how geometric properties of a contact structure are reflected in the monodromy map describing the open book decomposition. In this talk I will show that there are several interesting monoids in the mapping class group that are related to various properties of a contact structure (like being Stein fillable, weakly fillable, . . .). I will also show that there are open book decompositions of Stein fillable contact structures whose monodromy cannot be factored as a product of positive Dehn twists. This is joint work with Jeremy Van Horn-Morris and Ken Baker.

Monday, April 6, 2009, 3:00 pm
Mathematics and Science Center: W306

refreshments will be served in the department lounge at 2:30pm

Mathematics and Computer Science
Emory University