1023-51-558 **Matthew E Hedden*** (mhedden@math.mit.edu), Department of Mathematics, Room 2-101, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139.
Thurston-Bennequin bounds for knots in more general contact manifolds. Preliminary report.

This talk will discuss an integer-valued invariant associated to knots (Y, K) in a contact three-manifold, (Y, ξ). The invariant, denoted $\tau_\xi(Y, K)$, is a derivative of the knot Floer homology filtration. Under certain assumptions on ξ, we show that $\tau_\xi(Y, K)$ provides upper bounds for the framing numbers of Legendrian representatives of K.

In the case of the standard contact structure on S^3, $\tau_{\xi_{std}}(S^3, K)$ is denoted $\tau(K)$ and was first defined and studied by Ozsváth and Szabó, and independently by Rasmussen. Plamenevskaya discovered a connection between $\tau(K)$ and the framing invariants of Legendrian representatives of K. Specifically, she showed:

$$tb(\tilde{K}) + |rot(\tilde{K})| \leq 2\tau(K) - 1,$$

where $\tilde{K}$ is any Legendrian realization of K. Here *tb* and *rot* denote the Thurston-Bennequin and rotation numbers of $\tilde{K}$, respectively.

We will show that $\tau_\xi(Y, K)$ satisfies an analogous inequality. We will then present several applications. One such application uses $\tau_\xi(Y, K)$ to obstruct a knot (Y, K) from arising as the boundary of a properly embedded J-holomorphic curve, V, in a symplectic filling of (Y, ξ) i.e. $(Y, K, \xi) = \partial(W, V, \omega)$. (Received September 18, 2006)