THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

M. E. Taylor Analysis and PDE Seminar

Wednesday, April 24th
3:30 - 4:30 p.m.
Phillips Hall 385

A Geometric flow towards Hamiltonian stationary submanifolds

Micah Warren (UOregon)

Abstract. In joint work with Jingyi Chen, we introduce a geometric flow for Lagrangian submanifolds in a Kähler manifold which stays in its initial Hamiltonian isotopy class and is a gradient flow for volume. The stationary solutions are the Hamiltonian stationary Lagrangian submanifolds. The flow is not strictly parabolic but it corresponds to a fourth order strictly parabolic scalar equation in the cotangent bundle of the submanifold via Weinstein's Lagrangian neighborhood theorem. For any compact initial Lagrangian immersion, we establish short-time existence, uniqueness, and higher order estimates when the second fundamental forms are uniformly bounded up to time T.