1116-35-1142 **Nathan Totz*** (totz@math.umass.edu). *Global Well-Posedness of 2D Nonlinear Schrödinger Equations of Indefinite Signature.*

In this talk, we describe a new method to obtain global a priori bounds in time for solutions to nonlinear Schrödinger equations (NLS) on $\mathbb{R}^2$ having power nonlinearities of arbitrary odd degree, and with large initial data in Sobolev space. The method presented here applies to both the usual NLS equations associated to the Laplacian and with a nonlinearity of defocusing sign, as well as to the more difficult so-called "hyperbolic" NLS which is associated to an indefinite signature. The latter is particularly interesting since its long time behavior is to date unknown.

We show that, by rigorously justifying that these equations govern the modulation limit of an artificially constructed equation with an advantageous structure, every subcritical Sobolev norm of the solution increases a priori at most exponentially in time. Global existence in all subcritical Sobolev spaces then follows by standard local well-posedness results for (NLS). (Received September 17, 2015)