1108-35-256 **E. Compaan*** (`compaan2@illinois.edu`). *Smoothing and global attractors for the periodic Majda-Biello system.*

This talk will discuss smoothing and dynamical properties of the periodic Majda-Biello system, a coupled KdV-type system. First, given initial data in a Sobolev space, we show that the difference between the linear and the nonlinear evolution almost always lives in a smoother space. The smoothing depends on arithmetic properties of coupling parameter in the system, which controls the resonant sets. Similar smoothing results hold for the forced and damped version of the system; these results imply the existence of a global attractor in the energy space. Finally, when the damping is large in relation to the forcing term, the attractor is trivial. (Received January 15, 2015)