1112-35-483 **Jacob Bedrossian***, jacob@cscamm.umd.edu, Washington, DC, and **Pierre Germain** and **Nader Masmoudi**. *Dynamics near the subcritical transition of the 3D Couette flow.*

We discuss the dynamics of small perturbations of the plane, periodic Couette flow in the 3D incompressible Navier-Stokes equations at high Reynolds number. For sufficiently regular initial data, we determine the stability threshold for small perturbations and characterize the long time dynamics of solutions below this threshold. The primary stability mechanisms are an anisotropic enhanced dissipation effect and an inviscid damping effect of the velocity component normal to the shear, both a result of the mixing caused by the large mean shear. After detailing these linear effects, we will discuss some of the important steps in the proof, such as the analysis of the weakly nonlinear (potential) instabilities connected to the non-normal nature of the linearization. Joint work with Pierre Germain and Nader Masmoudi. (Received August 10, 2015)