1167-35-2 **Alexis F. Vasseur** and **Jincheng Yang*** (jcyang@math.utexas.edu). *New Estimates on the Second Derivatives of the 3D Navier-Stokes Equation.*

In this talk we present $L^{4/3,q}$ local integrability of the second spatial derivatives of suitable solutions to the Navier-Stokes equation for any $q > \frac{4}{3}$. This joint work with A. Vasseur improves the current result $L^{4/3,\infty}$ (Lions, 1996), and it is based on a blow-up technique using the universal scaling along approximated Lagrangian trajectories. Locally, we can obtain any regularity of the vorticity without any a priori knowledge of the pressure. The local-to-global step uses a recently constructed maximal function for transport equations. (Received December 14, 2020)