

1147-35-437

**Jiahong Wu\*** ([jiahong.wu@okstate.edu](mailto:jiahong.wu@okstate.edu)), 401 Mathematical Sciences, Department of Mathematics, Stillwater, OK 74078. *Stability problem on the magneto-hydrodynamic (MHD) equations with partial dissipation.*

This talk presents very recent work on the stability problem concerning the perturbation near the background magnetic field of the MHD equations with partial dissipation. We focus on two results. The first assesses the global  $H^3$ -stability for the 3D MHD equations with horizontal dissipation and vertical magnetic diffusion. The second establishes the global  $H^2$ -stability and associated large-time behavior for the 2D MHD equations with vertical dissipation and horizontal magnetic diffusion. These two new results are among the very few stability results currently available for the incompressible MHD equations. (Received January 23, 2019)