

1138-35-401

Mimi Dai* (mdai@uic.edu). *Well-posedness problems for the magneto-hydrodynamics models.*

We will talk about some recent results on the well-posedness problems in Sobolev spaces for the magneto-hydrodynamics with and without Hall effect, i.e., the Hall MHD and classical MHD models. One of the purposes of the work is to search the optimal Sobolev space of well-posedness for the two models. Another purpose is to understand the nonlinear Hall term $\nabla \times ((\nabla \times b) \times b)$ in the Hall MHD, which appears more singular than $u \cdot \nabla u$ in the NSE, but with special geometry. (Received February 14, 2018)