1167-35-241   **Jiahong Wu*** (`jiahong.wu@okstate.edu`), Department of Mathematics, Oklahoma State University, Stillwater, OK 74074. *Stabilizing Phenomenon for Incompressible Fluids.*

The background magnetic field stabilizes and damps electrically conducting fluids, and the temperature tames and stabilizes buoyancy driven fluids. These are just two examples of a seemingly universal stabilizing phenomenon that has been experimentally and numerically observed for different types of incompressible fluids. This talk presents recent work that establishes this phenomenon as mathematically rigorous stability results. In particular, we describe the global existence and stability results for the 3D incompressible anisotropic magnetohydrodynamic system near a background magnetic field, for the Boussinesq system near the hydrostatic equilibrium, and for the Oldroyd-B model near the trivial solution. (Received March 08, 2021)