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**Jiahong Wu\*** ([jiahong.wu@okstate.edu](mailto:jiahong.wu@okstate.edu)), 401 Mathematical Sciences, Department of Mathematics, Stillwater, OK 74078. *The magnetohydrodynamic equations with partial or fractional dissipation.*

The magnetohydrodynamic (MHD) equations govern the motion of electrically conducting fluids such as plasmas, liquid metals, and electrolytes. They consist of a coupled system of the Navier-Stokes equations of fluid dynamics and Maxwell's equations of electromagnetism. Besides their wide physical applicability, the MHD equations are also of great interest in mathematics. They share many similar features with the Navier-Stokes and the Euler equations. In the last few years there have been substantial developments on the stability and the global regularity problems concerning the magnetohydrodynamic (MHD) equations, especially when there is only partial or fractional dissipation. The talk presents recent results on the global well-posedness problem as well as on the stability problem for various partially or fractionally dissipated MHD systems. (Received August 15, 2018)