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Jiahong Wu* (jiahong.wu@okstate.edu), Department of Mathematics, 401 Mathematical Sciences, Oklahoma State University, Stillwater, OK 74078. *The 2D MHD equations with partial dissipation.*

This talk presents recent work on the global regularity problem concerning the two-dimensional (2D) magnetohydrodynamic (MHD) equations with only partial or fractional dissipation. Due to the nonlinear coupling between the evolution equations of the velocity and the magnetic field in the MHD system, the global regularity problem can be extremely difficult when only partial dissipation is present. We will report recent efforts on several partial or fractional dissipation cases and will cover both incompressible and compressible flows. (Received September 11, 2014)