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Dipendra Regmi* (dipendra.regmi@ung.edu), University of North Georgia, 3820 Mundy Mill Rd, Oakwood,, GA 30566. *Some recent results on the global regularity of two-dimensional magnetohydrodynamic equations*. Preliminary report.

The magnetohydrodynamic equations govern the dynamics of the velocity and the magnetic field in electrically conducting fluids such as plasmas and reflect the basic physics conservation laws. They have been at the center of numerous analytical, experimental, and numerical investigations. One of the most fundamental problems concerning the MHD equations is whether their classical solutions are globally regular for all time or they develop singularities.

In this presentation, we discuss some of the recent results and open problems related to incompressible magnetohydrodynamic equations. (Received January 13, 2022)