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**Jiahong Wu\*** ([jiahong@math.okstate.edu](mailto:jiahong@math.okstate.edu)), 401 Mathematical Sciences, Department of Mathematics, Stillwater, OK 74078. *Global regularity for the 2D MHD equations with mixed partial dissipation and magnetic diffusion.*

This talk presents a recent work with Chongsheng Cao on the 2D MHD equations [?]. Whether or not classical solutions of the 2D incompressible MHD equations without full dissipation and magnetic diffusion can develop finite-time singularities is a difficult issue. A major result of this work establishes the global regularity of classical solutions for the MHD equations with mixed partial dissipation and magnetic diffusion. In addition, the global existence, conditional regularity and uniqueness of a weak solution is obtained for the 2D MHD equations with only magnetic diffusion.

## References

- [1] C. Cao and J. Wu, Global regularity for the 2D MHD equations with mixed partial dissipation and magnetic diffusion, arXiv:0901.2908v1 [math.AP] 19 Jan 2009 (<http://arxiv.org/abs/0901.2908>).

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