

1089-76-228

**Xinwei Yu\***, 632 CAB, University of Alberta, Edmonton, Alberta T6R2K9, Canada, and  
**Chuong V. Tran, Luke A. K. Blackbourn** and **Zhichun Zhai**. *On Global Regularity of 2D  
Incompressible Magnetohydrodynamics equations with Partial Dissipation.*

In this talk I will discuss some recent analytical and numerical results regarding global regularity for the 2D incompressible magnetohydrodynamics equations with partial dissipation, that is when the dissipation term is only present in either the momentum equation or the induction equation but not both. I will present several new sufficient conditions for global regularity together with numerical simulation results indicating that these conditions are indeed satisfied. I will also present several results regarding global regularity of 2D and nD generalized magnetohydrodynamics equations in which the Laplacians are replaced by fractional Laplacian operators.

This is joint work with C. V. Tran and L. A. K. Blackbourn of University of St. Andrews, Scotland, and Z. Zhai of University of Alberta. (Received February 15, 2013)