

## WORKING AND LITERATURE SEMINAR

**Topic:** Global Solutions to the 2D Viscous, Non-resistive MHD System with Large Background Magnetic Field

**Speaker:** Prof. Ting Zhang, Zhejiang University

**Time:** 15:00-16:00, 17 February 2014

**Venue:** Room 379, Geography Building, 3663 Zhongshan Road North, Shanghai  
(华东师范大学中山北路校区, 地理楼 379 室)

### ABSTRACT OF THE TALK

In this paper, we consider the global existence and uniqueness of the solutions to the 2D viscous, non-resistive MHD system. For any initial data, if the background magnetic field is sufficiently large, then we can obtain the global strong solutions.

$$\begin{cases} \partial_t b + v \cdot \nabla b = b \cdot \nabla v, & (t, x) \in \mathbb{R}^+ \times \mathbb{R}^2, \\ \partial_t v + v \cdot \nabla v - \Delta v + \nabla p = b \cdot \nabla b, \\ \operatorname{div} v = \operatorname{div} b = 0, \\ b|_{t=0} = b_0, \quad v|_{t=0} = v_0, \end{cases}$$
$$v(t, x) \rightarrow 0, b(t, x) \rightarrow \left( \frac{1}{\varepsilon}, 0 \right)^T, \text{ when } |x| \rightarrow \infty,$$

### BIOGRAPHY

Ting Zhang is Professor of Mathematics at Zhejiang University in Hangzhou.