

Department of Mathematics
City University of Hong Kong

Special Colloquium

Organised by Prof. Tong Yang and Dr. Xiang Zhou

On the global dynamics of the 3-dimensional incompressible magnetohydrodynamics

by

Professor Pin YU
Yau Mathematical Sciences Center
Tsinghua University

Abstract :

We construct and study global solutions for the 3-dimensional incompressible MHD systems with arbitrary small viscosity. In particular, we provide a rigorous justification for the following dynamical phenomenon observed in many contexts: the solution at the beginning behave like non-dispersive waves and the shape of the solution persists for a very long time (proportional to the Reynolds number); thereafter, the solution will be damped due to the long-time accumulation of the diffusive effects; eventually, the total energy of the system becomes extremely small compared to the viscosity so that the diffusion takes over and the solution afterwards decays fast in time. We do not assume any symmetry condition. The size of data and the a priori estimates do not depend on viscosity. This is a joint work with Ling-Bing HE and Li XU.

Date: 4th October 2016 (Tuesday)
Time: 4:30 – 5:30pm
Venue: Y5-205
Yellow Zone, Level 5, Academic 1 (AC1)
City University of Hong Kong

**** All interested are welcome ****
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