

Asymptotic stability for n -dimensional magnetohydrodynamic equations

刘继涛 北京工业大学

This talk is concerned with the stability theory of n -dimensional incompressible and compressible magnetohydrodynamic (MHD for short) equations with only kinematic viscosity or magnetic diffusion in the periodic domain T^n . I will present some new results on the asymptotic stability and sharp decay estimates of this system when the magnetic field close to an equilibrium state satisfying the Diophantine condition. In the present works, by exploiting and effectively utilizing the structure of perturbation system, a new dissipative mechanism is found out and applied so that we can sharply improve the spaces of existing works, where the decay estimates and asymptotic stability of solutions are taking place. Some key ideas of our method will be discussed. This talk is based on joint works with Quansen Jiu and Yaowei Xie.

报告人简介：刘继涛，北京工业大学，副教授，数学系副主任，博士生导师。长期从事不可压流体方程的数学理论研究，尤其在不可压轴对称及螺旋对称 Navier-Stokes 方程，不可压轴对称 Euler 方程以及不可压磁流体方程等相关流体模型的数学理论研究上，取得了一系列创新性成果，在 J. Differential Equations, J. Nonlinear Sci., Discrete Contin. Dyn. Syst., Commun. Math. Sci., Nonlinear Anal., Z. Angew. Math. Phys.等国际知名期刊上发表学术论文二十余篇，主持国家自然科学基金、北京市自然科学基金等科研项目。