特邀美国加州大学（河滨分校）张旗教授来校作学术报告

报告题目：Dimension Reduction of Axially Symmetric Euler Equations Near Maximal Points off the Axis

报告人：张旗 教授

主持人：李子劲

报告时间：2023 年 7 月 28 日（星期五）下午 16:00-17:00

报告地址：藕舫楼 702

报告摘要：Let v be a solution of the axially symmetric Euler equations in a finite cylinder in $\mathbb{R}^3$. We show that suitable blow-up limits of possible singularity near maximal points off the vertical axis are two dimensional ancient solutions of the Euler equation in either $\mathbb{R}^2 \times (-\infty, 0]$ or $\mathbb{R}^2_+ \times (-\infty, 0]$. This reduces the search of off-axis self-similar or other blow-up solutions to a problem involving purely 2-dimensional Euler equations. Compared with the usual way of converting to the 2-dimensional Boussinesq's equations, this approach seems to potentially reduce the complexity since the Boussinesq's equations contain one extra unknown function, the temperature. Also, a certain widely expected asymptotic self-similar blow-up scenario at the boundary appears to be ruled out.

专家简介：张旗，美国加州大学（河滨分校）数学系教授，1996 年于美国普渡大学获博士学位，先后就职于美国孟菲斯大学、美国密苏里大学、美国加州大学伯克利分校、美国加州大学河滨分校。2006 年获得美国加州大学河滨分校终身教授。近年来先后受邀于南京大学、复旦大学担任思源特聘教授。张旗教授在几何分析与偏微分方程等方向都有着极深造诣，目前主要研究方向是带有奇性的抛物方程和抛物系统、Navier-Stokes 方程、热核的估计、Ricci 流等。在 CPAM，CMP，ARMA，Adv. Math.等顶尖国际数学期刊发表论文 100 余篇，Math Review 可查引用达 2200 余次。

数学与统计学院

2023 年 7 月 26 日