数学与系统科学研究院

计算数学所学术报告

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报告题目：

Helical Symmetric solutions of the 3D-Navier-Stokes equations in a rotating helical cylinder

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报告时间：**2015** 年 **10** 月 **30** 日（周五）

下午 **16:00-17:00**

报告地点：　数学院南楼七层

702 会议室

Abstract:

In this article, we investigate three dimensional solution with helical symmetry in two concentric rotating cylinders, inside is a helicoidal surface (screw propeller) while outside is a cylindrical surface. Uniqueness of weak helical solutions is proved, and these weak solutions are shown to be regular solutions existing from arbitrary times. The global universal attractors for the infinite-dimensional dynamical system generated by the corresponding semi-group of helical flow is shown to be compact and finite-dimensional. The Hausdorff and fractal dimensions of the global attractors are estimated in terms of the governing physical parameters and in terms of helical parameters. In particular, a bifurcation point of a state helical flow is found, and the existence of helical symmetry is broken.

欢迎大家参加！