



微分方程与计算物理研究室

2024 年度系列报告(1)

报告题目: Incompressible limit of three dimensional isentropic compressible Navier - Stokes equations with discontinuous initial data

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时间: 2024 年 9 月 28 日 (周六) 16:00-17:00

地点: 腾讯会议 458-323-266

摘要: We consider the global weak solutions to the Cauchy problem of isentropic compressible Navier-Stokes equations with bounded initial density and non-vacuum constant state as far field. These solutions converge globally in time to a global weak solution of the inhomogeneous incompressible Navier-Stokes equations as the bulk viscosity goes to infinity. These results generalize Danchin-Mucha's works (Adv. Math. 320: 904-925, 2017 and Comm. Pure Appl. Math. 76: 3437-3492, 2023) on the incompressible limit for strong solutions to weak solutions that have discontinuous density along surfaces. Some new techniques based on the effective viscous flux are developed in order to obtain the uniform a priori estimates. This is a joint work with Professor Xianpeng Hu (The Hong Kong Polytechnic University) and Professor Guochun Wu (Huaqiao University).