



北京理工大学

数学与统计学院学术报告

Quantum Boltzmann equations and fluid limits

报告人：江宁（武汉大学）

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地点： 北京理工大学良乡校区文萃楼I101

摘要： In his 2015 Ecole Polytechnique thesis, T.Zakrevskiy formally derived some fluid dynamics from quantum Boltzmann equation (Fermi-Dirac statistics). We rigorously justify two types of limits: incompressible Navier-Stokes-Fourier and compressible Euler (then acoustic) systems, by establishing some new nonlinear estimates on triple terms, and uniform estimates with respect to Kundsen number. These are joint works with Kai Zhou (and partially Linjie Xiong).

In the second part of this talk, we also report some recent progress on the Bose-Einstein statistics in high temperature case. We can also obtain incompressible Navier-Stokes limit. This is joint work with Ling-Bing He and Yu-long Zhou.