数学与系统科学研究院

计算数学所学术报告

报告人： **Dr. Zheng Ma**

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报告题目：

A fast spectral method for inelastic collision operator and the heated granular flow

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报告时间：**2018 年 5 月 29 日（周二）**

上午 10:30-11:30

报告地点： 数学院南楼七层

702 教室

Abstract：

In this talk, I will present a fast spectral algorithm of the inelastic Boltzmann collision operator, with its application to one of the widely used model of granular gases, the heated Enskog Boltzmann equation. Comparing to the direct spectral method, our fast algorithm reduces the computational complexity from $O(N^6)$ to $O(MN^4 \log(N))$ and the storage from $O(N^6)$ to $O(MN^4)$, where N is the number of discretization points in velocity dimension and $M \ll N2$ is the number of numerical quadrature points. We test the numerical accuracy and efficiency in both two dimensional and three dimensional cases, where the famous Haff's cooling law is recovered in the 3D example.

欢迎大家参加！