

数学与系统科学研究院  
计算数学所网络学术报告

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报告题目:

**Suppression of Recurrence in the  
Hermite-Spectral Method for  
Transport Equations**

邀请人: 于海军 副研究员

报告时间: 2020 年 12 月 15 日 (周二)

上午 10:00-11:00

报告工具: 腾讯会议 (ID: 678 853 955)

会议链接:

<https://meeting.tencent.com/s/RN538LPBF5o6>

## **Abstract:**

**We study the unphysical recurrence phenomenon arising in the numerical simulation of the transport equations using Hermite-spectral method. From a mathematical point of view, the suppression of this numerical artifact with filters is theoretically analyzed for two types of transport equations. It is rigorously proven that all the non-constant modes are damped exponentially by the filters in both models, and formally shown that the filter does not affect the damping rate of the electric energy in the linear Landau damping problem. Numerical tests are performed to show the effect of the filters.**

**欢迎大家参加！**