

数学与系统科学研究院  
计算数学所网络学术报告

报告人: 蒋凯 教授

(湘潭大学数学与计算科学学院)

报告题目:

**Computing Quasiperiodic Systems**

邀请人: 龚伟 副研究员

报告时间: 2021年5月20日(周四)

上午 10:00-11:00

报告工具: 腾讯会议 (ID: 674 970 780)

会议链接:

<https://meeting.tencent.com/s/0xu0oZaMJjdV>

## **Abstract:**

Quasiperiodic structures, related to irrational numbers, are a class of important and widely existing systems, including quasicrystals, incommensurate systems, defects, interfacial problems. Due to the irrational numbers, the quasiperiodic system is a space-filling structure without decay, which results in difficulty in numerical computation. A traditional method is using a periodic system to approximate the quasiperiodic system. It produces a Diophantine approximation error and related error. In this talk, we will establish the error analysis of the periodic approximation method. Furthermore, we will propose an efficient method to avoid the Diophantine approximation and obtain high accurate quasiperiodic solutions. We also apply the novel method to some applications, including soft quasicrystals, quasiperiodic quantum systems, and quasiperiodic interfaces.

**欢迎大家参加！**