

数学与系统科学研究院
计算数学所网络学术报告

报告人: **Dr. Shenggao Zhou**

(*Shanghai Jiao Tong University*)

报告题目:

**Structure-Preserving Numerical
Methods for the
Poisson-Nernst-Planck Equations**

邀请人: 卢本卓 研究员

报告时间: 2021 年 3 月 26 日 (周五)

下午 15:00-17:00

报告工具: 腾讯会议 (ID: 685 985 575)

会议链接:

<https://meeting.tencent.com/s/FF02xRIetdNh>

Abstract:

The Poisson-Nernst-Planck (PNP) type of equations are one of the most extensively studied models for the transport of charged particles in many physical and biological problems. The solution to the PNP equations has many properties of physical importance, e.g., positivity, mass conservation, energy dissipation. It is desirable to design numerical methods that are able to preserve such properties at discrete level. In this talk, we will present two types of numerical schemes that can maintain physical properties. One is based on the so-called Slotboom variables; the other is based on the gradient flow structure of the PNP equations. Some numerical results are shown to demonstrate their performances. This is a joint work with Jie Ding, Chun Liu, Cheng Wang, Zhongming Wang, Xingye Yue, and many others.

欢迎大家参加！