

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. David Andelman**

(*Tel Aviv University and Weizmann Institute*)

报告题目:

**100 years of electrified interfaces: the
Poisson-Boltzmann theory and some
recent developments**

邀请人: 卢本卓 研究员

报告时间: 2016 年 6 月 21 日 (周二)

上午 10:00-11:00

报告地点: 数学院南楼五层

514 会议室

Abstract:

The Poisson-Boltzmann theory is a mean-field description of ionic solutions and charge interfaces, and has been instrumental during the last century to predict charge distributions and interactions between charged macromolecules. While the electrostatic model of charged fluids, on which the Poisson-Boltzmann description rests, and its statistical mechanical consequences have been scrutinized in great detail, much less is understood about its probable shortcomings when dealing with various aspects of real physical, chemical and biological systems. After reviewing the important results of the Poisson-Boltzmann theory, I will discuss several modern extensions and modifications as applied to ions in confined geometries. They include the effect of ion-dipole interaction on dielectric properties, the finite size of ions and other short-range interactions, and correction to the classical Onsager-Samaras theory of surface tension of electrolyte solutions.

欢迎大家参加！