

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Ren-Cang Li**

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报告题目:

Classical Min-max Principles and Beyond

邀请人: 周爱辉 研究员

报告时间: **2013年8月2日 (周五)**

上午10:00~11:00

报告地点: **科技综合楼三层311**

计算数学所报告厅

Abstract:

The classical min-max principles of Courant, Fischer, Lidskii, and Wielandt for the Hermitian eigenvalue problem $Ax = \lambda x$ were developed over a span of about five decades from the 1900s to 1950s. These principles are very fundamental in the theory of eigenvalues, and contribute in many ways to our deep understanding of the problem as well as today's efficient numerical methods for solving small and large scale Hermitian eigenvalue problems. Owing to such prominent importance, extensions of these min-max principles are of great theoretical and practical interest for eigenvalue problems beyond the Hermitian one. In this talk, we will survey some of these extensions for generalized Hermitian eigenvalue problem $Ax = \lambda Bx$ with indefinite and possibly singular B , quadratic eigenvalue problem $(A\lambda^2 + B\lambda + C)x = 0$, and linear response eigenvalue problem arising from time-dependent density functional theory (TDDFT). We will also explain their potential numerical implications.

欢迎大家参加!