

数学与系统科学研究院

计算数学所学术报告

报告人: **Professor Kok Lay Teo**

(Curtin University, Australia)

报告题目:

**Switching Time and System Parameter
Optimization in Nonlinear Switched
Time-Delay Systems**

邀请人: 刘歆 副研究员

报告时间: **2018年4月5日(周四)**

下午 16:00--17:00

报告地点: **数学院科技综合楼**

Z311 报告厅

报告摘要:

This talk will discuss the problem of estimating unknown time-delays (both state- and input-delays) and unknown system parameters

in a general nonlinear time-delay system. We propose a unified computational approach that involves solving a dynamic optimization problem, whose cost function measures the discrepancy between predicted and observed system output, to determine optimal values for the unknown quantities. We discuss two computational procedures for computing the partial derivatives of the cost function in this problem: one involves solving a set of auxiliary time-delay systems forward in time; the other involves solving an auxiliary “costate” system backwards in time. By combining either of these computational procedures with a standard gradient-based optimization algorithm, the optimal values for the unknown delays and system parameters can be obtained.

Furthermore, this approach will be applied to the situation when the observed data is noisy.

Finally, some real practical examples will be solved using the methods proposed.

欢迎大家参加！