

# 数学与系统科学研究院

## 计算数学所学术报告

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报告题目:

**Optimal Estimation of Sensor Biases for  
Asynchronous Multi-Sensor Registration**

邀请人: 戴彧虹研究员

优化与应用研究中心

报告时间: 2018年1月27日(周六)

上午 10:30--11:30

报告地点: 数学院南楼N202 教室

报告摘要:

An important step in the asynchronous multi-sensor registration problem is to estimate sensor range and azimuth biases from their noisy asynchronous measurements. The

**estimation problem is generally very challenging due to highly nonlinear transformation between the global and local coordinate systems as well as measurement asynchrony from different sensors. In this work, we propose a novel nonlinear least square (LS) formulation for the problem by only assuming that a reference target moves with an unknown constant velocity. We also propose a block coordinate decent (BCD) optimization algorithm, with a judicious initialization, for solving the problem. The proposed BCD algorithm alternately updates the range and azimuth bias estimates by solving linear least square problems and semidefinite programs (SDPs). The proposed algorithm is guaranteed to find the global solution of the problem and the true biases in the noiseless case. Simulation results show that the proposed algorithm significantly outperforms the existing approaches in terms of the root mean square error (RMSE)**

**欢迎大家参加！**