# 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**：

# Backward SDE Methods for Nonlinear Filtering Problems

**邀请人**： 洪佳林 研究员

**报告时间**：2017 年 6 月 14 日（周三）

下午 16:00-17:00

**报告地点**： 数学院南楼七层

702 教室

## Abstract：

We consider a dynamical system modeled by a stochastic differential equation with observational data available for the functional of the system state. The goal of the nonlinear filtering problem is to find the best estimate of the state of the dynamical system based on the observation. Some well known approaches include extended Kalman filter, particle filter and Zakai filter. In this presentation, we shall present a new nonlinear filtering method, named the backward SDE filter. The backward SDE filter has the accuracy advantage of continuous filters such as the Zakai filter. In the meantime, it has the same sampling flexibility of discrete filters such as the particle filter. Both theoretical results and numerical experiments will be presented.

## 欢迎大家参加！