# 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：

**Parareal Algorithms Applied to Stochastic Differential Equations**

邀请人： 洪佳林 研究员

报告时间：**2019 年 12 月 22 日（周日）**

**上午 9:30-10:30**

报告地点： 数学院南楼二层

**202 教室**

# Abstract：

In this talk, the first part mainly introduces the parareal algorithms, which is a two-level integrators with fine and coarse schemes and have been a "parallel in real time" implementation for the time evolution problem. Then coupled the parareal algorithm with projection methods of the trajectory on a specific manifold, we show that the methods have the ability of the long time computation in preserving the conserved quantities intrinsicly for stochastic differential equations. Besides, it is aslo proved that the parareal algorithm as a iterated scheme can improved the order of convergence of the SDE in some sense. Finally, three-level multigrid reduction in time(MGRIT) is proposed for SDE. Compared to this different waveform relaxing techniques, the convergence rate of the three level is superior to the two level case.

欢迎大家参加！