

数学与系统科学研究院

计算数学所学术报告

报告人: **Dr. Marcus David Webb**

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报告题目:

**Volume preservation by Runge -
Kutta methods**

邀请人: 唐贻发 研究员

报告时间: **2015 年 8 月 12 日 (周三)**

上午 10:30~11:30

报告地点: **数学院南楼七层**

702 会议室

Abstract:

It is a classical theorem of Liouville that Hamiltonian systems preserve volume in phase space. Any symplectic Runge-Kutta method will respect this property for such systems, but Iserles, Quispel and Tse showed that no B-Series method can be volume preserving for all volume preserving vector fields (BIT 47 (2007)351–378). In this talk we show that despite this result, symplectic Runge–Kutta methods can be volume preserving for a much larger class of vector fields than Hamiltonian systems, and time permitting, discuss how some Runge–Kutta methods can preserve a modified measure exactly.

欢迎大家参加！