

数学与系统科学研究院

计算数学所学术报告

报告人: 虞国富 教授

( 上海交通大学 )

报告题目:

**Integrable discretization and  
numerical simulations of the  
generalized coupled integrable  
dispersionless equations**

邀请人: 胡星标 研究员

报告时间: 2018 年 12 月 27 日(周四)

**晚上 20:00-21:00**

报告地点: 数学院南楼七层

**702 教室**

## **Abstract:**

**In this talk, we study the generalized coupled integrable dispersionless (GCID) equations and construct two integrable discrete analogues including a semi-discrete system and a full-discrete one. The results are based on the relations among the GCID equations, the sine-Gordon equation and the two-dimensional Toda lattice equation. We also present the  $N$ -soliton solutions to the semi-discrete and fully discrete system in the form of Casorati determinant. In the continuous limit, we show that the fully discrete GCID equations converge to the semi-discrete GCID equations, then further to the continuous GCID equations. By using the integrable semi-discrete system, we design two numerical schemes to the GCID equations and carry out several numerical experiments with solitons and breather solutions. This is a joint work with Ying-Nan Zhang.**

**欢迎大家参加！**