

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:

**Quantum integral solutions to  
q-difference 2D Toda lattice equation  
and its Backlund transformation**

邀请人: 常向科 副研究员

报告时间: 2021 年 9 月 12 日 ( 周日 )

下午 16:00-16:45

报告地点: 数学院南楼

208 教室

## **Abstract:**

In literature, different extensions of integrable systems are studied, among which  $q$ -deformed integrable systems has drawn great attention. In our previous work, we were able to find out the Lax pair of the  $q$ -difference 2D Toda lattice equation (2DTL) by constructing its corresponding Backlund transformation. We also managed to recover the Casorati-type determinant solutions to 2DTL by virtue of its Darboux transformation. However how to construct its binary Darboux transformation which produces Grammian-type solutions remains a question. Recently, we successfully figure out the Grammian-type solutions to 2DTL which is expressed in terms of quantum integrals, which makes it possible to construct its binary Darboux transformation and work out quantum integral solutions to the Backlund transformation of 2DTL.

**欢迎大家参加！**