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：

On Elliptic Aspects of Discrete Integrable Systems

邀请人：　　胡星标 研究员

报告时间：**2016** 年 **11** 月 **20** 日（周日）

下午 **16:00-17:00**

报告地点：　　数学院南楼七层

702 教室

Abstract:

There are two ways elliptic curves can play a role in integrable systems: either as elliptic type solutions (i.e. solutions expressible in terms of elliptic functions), or as elliptic deformation of the equations themselves. In either way, the study of the elliptic case is often richer that the rational and trigonometric/hyperbolic case, and reveals many new features of the models in question. In this talk, first, I will give a brief introduction on discrete integrable systems (DIS), including the concept of multidimensional consistency, Adler-Bobenko-Suris' classification of quadrilateral lattice equations, etc. Then, I will introduce a method used in DIS, Cauchy matrix approach, which is based on the Sylvester equation and discrete dispersion relations. Next, we show that the Cauchy matrix approach works for the study of some elliptic Integrable systems, i.e. some equations in these systems are formulated with an elliptic curve. Finally, we show a kind of soliton solutions expressed via Weirestrass σ σ function.

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