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：

The application of the theory of trigonal curves to the discrete coupled nonlinear Schrodinger hierarchy

邀请人： 胡星标 研究员

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晚上 19:30-20:30

报告地点： 科技综合楼三层

311 报告厅

Abstract：

The discrete coupled nonlinear Schrödinger (DCNLS) hierarchy associated with a discrete 3×3 matrix spectral problem is derived, which are composed of the positive and negative flows. Utilizing the characteristic polynomial of Lax matrix for the DCNLS hierarchy, we introduce a trigonal curve with three infinite points and three zero points, from which we establish the associated Baker–Akhiezer function and meromorphic functions. The DCNLS equations are decomposed into a system of Dubrovin-type ordinary differential equations. Using the theory of the trigonal curve and the properties of the three kinds of Abel differentials, we obtain the explicit theta function representations of the Baker–Akhiezer function, the meromorphic functions, and in particular, that of solutions for the entire DCNLS hierarchy.

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