

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:

**Elliptic orthogonal polynomials and
a higher-order generalization
of the discrete-time Toda equation**

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Abstract:

It is well known (actually since Frobenius) that adjacent families orthogonal polynomials for arbitrary weights or measures lead to a bilinear relation for the corresponding Hankel determinants which is identical to the discrete-time Toda equation. We generalize this construction to the case of elliptic orthogonal polynomials, i.e., adjacent families of 2-variable formally orthogonal polynomials restricted to an elliptic curve. Thus a quadrilinear 11-point equation is found constituting a higher-order analogue of the discrete-time Toda equation. We discuss also the connection to the famous and quotient-difference (QD) algorithm and its generalization to the elliptic case (the so-called QQD algorithm).

This work is in collaboration with P. Spicer and P. Van der Kamp.

欢迎大家参加!