

数学与系统科学研究院

计算数学所学术报告

报告人: **Prof. Yuan Xu**

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报告题目:

**Cubature Rules and Orthogonal
Polynomials**

邀请人: 许志强 研究员

报告时间: 2016 年 6 月 29 日 (周三)

上午 10:00

报告地点: 科技综合楼三层

311 报告厅

Abstract:

Gaussian quadrature rules are important tools for numerical integration. Their nodes are necessarily zeros of orthogonal polynomials. Does this relation extend to cubature (synonym for quadrature in higher dimension) rules and orthogonal polynomials in several variables?

The extension works in some extend, but the relation becomes far more complicated in higher dimension. For starter, it is necessary to consider common zeros of a family of polynomials, or, variety of a polynomial idea, in the language of algebraic geometry. This talk explains what is known about zeros of orthogonal polynomials and cubature rules, mostly restricted to two variables, and it includes several recent examples that provide efficient numerical integration rules.

欢迎大家参加！