数学与系统科学研究院

计算数学所学术报告

(定期学术报告)

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报告题目：

Spectral Methods on Triangles

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下午 4:00—5:00

报告地点：科技综合楼三层 311

计算数学所报告厅

Abstract：

In this talk, the spectral methods using

orthogonal polynomials on a triangle are first investigated. We start with the generalized Koornwinder polynomials as the two-dimensional analogue of the Jacobi polynomials, study the corresponding orthogonal projection approximations and establish their optimal error estimates in weighted Sobloev spaces. Then the spectral approximation schemes for model equations are devised and the efficient implementations are discussed. Finally, a rational approximation and a non-rational approximation on the triangle are proposed and analyzed in this talk. Both of the rational and the non-rational basis functions in the triangle are obtained from the polynomials in the reference square through a collapsed coordinate transform. It is shown that both of the rational and the non-rational approximations are as accurate as the polynomial approximation on the triangle.