北京理工大學

数学与统计学院学术报告

ADAPTIVE COMPUTATION OF FOURTH-ORDER PROBLEMS

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时间：2024.10.09（周三） 10：30-11:30

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摘要：The popular (piecewise) quadratic schemes for the fourth-order plate bending problems based on triangles are the nonconforming Morley finite element, two discontinuous Galerkin, the C0 interior penalty, and the WOPSIP schemes. The first part of the presentation discusses recent applications to the linear bi-Laplacian and to semi-linear fourth-order problems like the stream function vorticity formulation of incompressible 2D Navier-Stokes problem and the von Kármán plate bending problem. The role of a smoother is emphasised and reliable and efficient a posteriori error estimators give rise to adaptive mesh-refining strategies that recover optimal rates in numerical experiments. The last part addresses recent developments on adaptive multilevel Argyris finite element methods. The presentation is based on joint work with Gräßle (Humboldt) and N. Nataraj (IITB, Mumbai) partly reflected in the references below.

个人简介：Carsten Carstensen教授,国际计算数学界著名学者，发表了近300篇高水平论文，其中超过三分之一发表在计算数学领域的前三大顶级期刊上，引用次数为10890次。Carstensen教授曾担任计算数学顶级期刊Mathematics of Computation和SIAM J Numerical Analysis等编委，两届GAMM微观结构分析委员会主席，现任Journal Computational Methods in Applied Mathematics主编。Carstensen教授参与组织90多个国际学术活动,包括非标准有限元和多尺度方法的国际研讨会、欧洲有限元年会、RMMM、最小二乘最小残差、以及CMAM等系列会议，作为联合主席和德国代表团主席组办了八次中德计算与应用数学双边研讨会。

主办单位：北京理工大学数学与统计学院

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