

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:

$A-\phi$ **Finite Element Methods for 3D
Electromagnetic Problems**

邀请人: 曹礼群研究员

报告时间: 2010年4月5日(周一)

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, $A-\phi$ nodal finite element methods are

used to solve 3D electromagnetic problems, including transient and harmonic eddy current equations and Maxwell equations. Although introducing a vector potential A and a scalar potential ϕ increases the number of unknowns and equations, these apparent complications are justified by a better way of dealing with possible discontinuities in the process of numerical schemes. These schemes presented in this talk are added the penalty function terms in their governing equations to guarantee the existence and uniqueness of approximating solutions. Some the energy–norm error estimates of the schemes are given and several computer simulation results are shown to verify the validity of the schemes.