数学与系统科学研究院

计算数学所学术报告

报告人：应文俊 特别研究员

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报告题目：

A Grid-based Boundary Integral Method for an Elliptic Interface Problem on Closely Packed Cells

邀请人：　张硕 博士

报告时间：2015 年 8 月 17 日（周一）

下午 15:00~16:00

报告地点：　科技综合楼三层

311 报告厅

Abstract：

This talk will present a Cartesian grid-based boundary integral method for an interface problem of the Laplace equation on closely packed cells in the free space. It is known that, when the interface of the problem consists of multiple closely packed cells, the boundary integral formulation involves weakly/nearly singular, singular and hyper-singular boundary integrals. Direct evaluation of them by the standard method may have accuracy issues. The method to be presented is an extension of the kernel-free boundary integral method. It is an alternative but accurate numerical method for evaluating nearly singular, singular and hyper-singular boundary integrals. To evaluate a boundary integral, the method first solves an equivalent simple, interface problem on a Cartesian grid with a fast Poisson solver, then interpolates the grid solution to get values of the boundary integral at points of interest. Numerical examples with a second-order and a fourth-order version of the Cartesian grid-based evaluation method will be presented.

欢迎大家参加！