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：

From asymptotics to numerics of highly oscillatory integrals

邀请人：洪佳林研究员

报告时间：2011 年 4 月 15 日（周五）

上午 10：00-11：00

报告地点：科技综合楼三层 311

计算数学所报告厅

Abstract:

In this talk we review recent work on the computation of highly oscillatory in- tegrals. While classical quadrature methods are useless in this context, proper un- derstanding of the asymptotics of such integrals leads to a number of very power- ful techniques. We will introduce in detail Filon-type methods, commenting briefly upon Levin-type methods and the approach of numerical steepest descent. This will be followed by a brief review of a number of applications: to Lie-group methods for ODEs, exponential integrators and asymptotic/numeric techniques for highly-oscillatory DEs, modified Fourier expansions and spectral problems for Fredholm equations.

欢迎大家参加！