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 contour-integral based method for generalized eigenvalue problems

邀请人：　黄记祖 博士

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上午 **9:30-10:30**

报告地点：　科技综合楼三层

311 报告厅

Abstract:

The contour-integral based eigensolvers are the recent efforts for computing the eigenvalues inside a given region in the complex plane. The best-known members are the Sakurai-Sugiura (SS) method, and the FEAST algorithm. An attractive computational advantage of these methods is that they are easily parallelizable. The FEAST algorithm was developed for the generalized Hermitian eigenvalue problems. It is stable and accurate. However, it may fail when applied to non-Hermitian problems. In this talk, we will introduce a generalized FEAST algorithm, which aims to extend FEAST to the non-Hermitian problems. Our approach can be summarized as follows: (i) construct a particular contour integral to form a search subspace containing the desired eigenspace, and (ii) use the oblique projection technique to extract desired eigenpairs with appropriately chosen test subspace. In addition, in the talk, a contour-integral based method for counting the eigenvalues inside a given region will be introduced. Numerical experiments are reported to illustrate the numerical performance of our methods.

欢迎大家参加！