<<求解代数特征值问题模板实用指南>>

图书基本信息

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内容概要

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书籍目录

章节摘录

版权页：插图：In many large scale scientific or engineering computations, ranging from computing the frequency response of a circuit to the earthquake response of a building to the energy levels of a molecule, one needs to find eigenvalues and eigenvectors of a matrix. There are many mathematical ways to formulate eigenvalue problems, and even more ways have been proposed to solve them numerically. This book is intended to be a guide to finding the best numerical method for an eigenvalue problem.The current state of the art is such that excellent methods exist for many eigenproblems, especially for small- to medium-sized dense matrices. These algorithms have been made available in programming environments like MATLAB , libraries like LAPACK [12], and many other commercial and public packages. But for very large and (typically) sparse eigenvalue problems no single best method exists. The sheer number of methods and the complicated ways they depend on mathematical properties of the matrix and trade off efficiency and accuracy make it difficult for experts, let alone general users, to find the best method for a given problem. Good online search facilities and software repositories exist, notably GAMS (Guide to Available Mathematical Software)2 and NETLIB.S These facilities permit searches based on library names, subroutines names, key words, and a taxonomy of topics in numerical computing. But they will not give advice as to which method is best to use for a particular problem. As a result, the authors of this book and other experts are frequently asked for advice in choosing an algorithm. This situation has motivated us to distill our knowledge into this book to make it as widely available as possible.

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《求解代数特征值问题模板实用指南(影印版)》：国际著名数学图书

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