

<<应用数值线性代数>>

图书基本信息

书名：<<应用数值线性代数>>

13位ISBN编号：9787302245001

10位ISBN编号：7302245002

出版时间：2011-2

出版时间：清华大学出版社

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页数：419

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### 内容概要

Designed for use by first-year graduate students from a variety of engineering and scientific disciplines, 《Applied Numerical Linear Algebra》 comprehensive textbook covers the solution of linear systems, least squares problems, eigenvalue problems, and the singular value decomposition. The author James Demmel, who helped design the widely used LAPACK and ScaLAPACK linear algebra libraries, draws on this experience to present state-of-the-art techniques for these problems, 《Applied Numerical Linear Algebra》 including recommendations of which algorithms to use in a variety of practical situations.

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作者简介

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## 媒体关注与评论

This book is a friendly treatment of numerical linear algebra tailored to first-year graduate students from a variety of engineering and scientific disciplines. The treatment of rounding error analysis and perturbation theory is exceptionally thorough and careful.... The author's writing style is very clear and a pleasure to read. — William W. Hager, *Mathematical Reviews*, Issue 98m. Compare Demmel with the standard work by G. Golub and C. Van Loan, *Matrix Computations* (3rd ed., 1996)... Demmel offers a smaller number of topics but focuses on the most important, and provides a more readable introduction for beginners. — B. Borchers, *CHOICE*, Vol. 35, No. 7, March 1998. The disposition is very much like a series of lectures, new concepts are introduced precisely where needed... Illustrating examples are given, some reporting really heavy computations, but the author does not shy away from giving mathematical proofs where that is needed... — A. Ruhe, *Zeitschrift für Mathematik und ihre Grenzgebiete*, Band 879/98. If you do any computing with matrices— including linear systems, least squares and eigenvectors— this book cannot but help you understand what you are doing and why. It presents state-of-the-art material (as of June 1997) and can serve as a text or a reference... — L. Ehrlich, *Computing Reviews*, February 1998. Jim Demmel's book on applied numerical linear algebra is a wonderful text blending together the mathematical basis, good numerical software, and practical knowledge for solving real problems. It is destined to be a classic. — Jack Dongarra, University of Tennessee, Knoxville. This is an excellent graduate-level textbook for people who want to learn or teach the state of the art of numerical linear algebra. It covers systematically all the fundamental topics in theory, as well as software implementation. The book is very easy to use in the classroom since it provides pointers, in the book and the author's home page, to lots of available Matlab and LAPACK routines, and it has a large number of homework problems marked Easy, Medium, and Hard. The book requires the students to have a stronger background in linear algebra than most other engineering books on numerical linear algebra. — Xia-Chuan Cai, University Of Colorado.

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