Author(s) : see below **Library:** MATHLIB
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Linear Algebra Package

Authors: E. Anderson, Z. Bai, C. Bischof, J. Demmel, J. Dongarra, J. Du Croz, A. Greenbaum, S. Hammarling, A. McKenney, S. Ostrouchov, and D. Sorensen.

`LAPACK` is a package of subroutines written in Fortran for solving the most common problems in numerical linear algebra: systems of linear equations, linear least squares problems, eigenvalue problems, and singular value problems. `LAPACK` is intended to supersede `LINPACK` and `EISPACK`. It extends the functionality of these packages by including equilibration, iterative refinement, error bounds, and driver routines for linear systems, routines for computing and re-ordering the Schur factorization, and condition estimation routines for eigenvalue problems. `LAPACK` improves on the accuracy of the standard algorithms in `EISPACK` by including high accuracy algorithms for finding singular values and eigenvalues of bidiagonal and tridiagonal matrices respectively that arise in SVD and symmetric eigenvalue problems. The algorithms and software are structured to achieve high efficiency on vector processors, high-performance "superscalar" workstations, and shared-memory multi-processors.

Structure:

`SUBROUTINE` subprograms

Usage:

It is highly recommended to obtain a copy of the `LAPACK` Users' Guide published by SIAM. This Users' Guide gives a detailed description of the philosophy behind `LAPACK` as well as an explanation of its usage. European users must order from the distributors of SIAM books in Europe:

STM Distribution Ltd.
Sunbury International Business Centre
Middlesex TW16 7DX, England
Tel. +44 932 765119, FAX +44 932 765429

or from booksellers. Other users should contact SIAM directly in order to find out the address of the local retailer:

SIAM
3600 University City Science Center
Philadelphia, PA 19104-2688
Tel. +1 215 382 9800, FAX +1 215 386 7999 .

Availability
CERN is distributing the package only in compiled form, suited for the CERN-supported platforms. Source code is directly available via `netlib` (use `find netlib` for details). Alternatively, NAG offers the distribution via magnetic tapes for a nominal handling charge. NAG can be contacted at

NAG Response Centre
Tel. +44 865 311744, FAX +44 865 311755

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