LAPACK users' guide

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LAPACK is a library of numerical linear algebra subroutines designed for high performance on workstations, vector computers, and shared memory multiprocessors. Release 3.0 of LAPACK introduces new routines and extends the functionality of existing routines. The most significant new routines and functions include:
1. a faster singular value decomposition computed by divide-and-conquer
2. faster routines for solving rank-deficient least squares problems: Using QR with column pivoting using the SVD based on divide-and-conquer
3.new routines for the generalized symmetric eigenproblem: faster routines based on divide-and-conquer routines based on bisection/inverse iteration, for computing part of the spectrum
4. faster routine for the symmetric eigenproblem using "relatively robust eigenvector algorithm"
5. new simple and expert drivers for the generalized nonsymmetric eigenproblem, including error bounds
6. solver for generalized Sylvester equation, used in 5
7.computational routines used in 5
Each Users' Guide comes with a "Quick Reference Guide" card.