Flags

/M=*method* Determines the solution method which best suites input *matrixA*.

method=1: Uses simple LU decomposition (default). See also LAPACK documentation for SGESV, CGESV, DGESV, and ZGESV.

Creates the wave W_IPIV that contains the pivot indices that define the permutation matrix P. Row (i) if the matrix was interchanged with row ipiv(i).

method=2: If *matrixA* is band diagonal, you also have to specify /D. See also LAPACK documentation for SGBSV, CGBSV, DGBSV, and ZGBSV.

Creates the wave W_IPIV, which contains the pivot indices that define the permutation matrix P. Row (i) if the matrix was interchanged with row ipiv(*i*). Also note that if you are using the /O flag, the overwritten waves may have a different dimensions.

method=4: For tridiagonal matrix; still expecting full matrix in *matrixA*, but it will ignore the data in the elements outside the 3 diagonals. See also LAPACK documentation for SGTSV, CGTSV, DGTSV, and ZGTSV.

method=8: Symmetric/hermitian. See also LAPACK documentation for SPOSV, CPOSV, DPOSV, and ZPOSV.

method=16: Complex symmetric (complex only). See also LAPACK documentation for CSYSV and ZSYSV.

/D={*sub*,*super*} Specifies a band diagonal matrix. The subdiagonal (*sub*) and superdiagonal (*super*) size must be positive integers.

/L Uses the lower triangle of *matrixA*. /L and /U are mutually exclusive flags.

/U Uses the upper triangle of *matrixA*. /U is the default.

/O Overwrites *matrixA* and *matrixB* with the results of the operation. This will save on the amount of memory needed.

/Z No error reporting.

Details

If /O is not specified, the operation also creates the n-by-n wave M_A and the n-by-nrhs solution wave M_B.

The variable V_flag is created by the operation. If the operation completes successfully, V_flag is set to zero, otherwise it is set to the LAPACK error code.

See Also

Matrix Math Operations on page III-138 for more about Igor's matrix routines and for background references with details about the LAPACK libraries.

MatrixLinearSolveTD

MatrixLinearSolveTD [**/Z**] ***upperW, mainW, lowerW, matrixB***

The MatrixLinearSolveTD operation solves the linear system *TDMatrix**X = *matrixB*. In the matrix product on the left hand side, *TDMatrix* is a tridiagonal matrix with upper diagonal *upperW*, main diagonal *mainW*, and lower diagonal *lowerW*. It solves for vector(s) X depending on the number of columns (NRHS) in *matrixB*.