See Also
Using MatrixOp on page III-140

Matrix Math Operations on page III-138 for more about Igor's matrix routines

FastOp

MatrixRank

matrixRank(*matrixWaveA* [, *conditionNumberA*])

The matrixRank function returns the rank of *matrixWaveA* subject to the specified condition number.

The matrix is not considered to have full rank if its condition number exceeds the specified *conditionNumberA*.

If the optional parameter *conditionNumberA* is not specified, Igor Pro uses the value 10^{20}.

matrixRank supports real and complex single precision and double precision numeric wave data types.

The value of *conditionNumberA* should be large enough but taking into account the accuracy of the numerical representation given the numeric data type.

If there are any errors the function returns NaN.

See Also
Matrix Math Operations on page III-138 for more about Igor's matrix routines.

MatrixReverseBalance

MatrixReverseBalance [flags] *scaleWave*, *eigenvectorsWave*

MatrixReverseBalance inverse-transforms left or right eigenvectors contained in *eigenvectorsWave* that were computed for a matrix that was balanced using MatrixBalance. The results are the eigenvectors of the pre-balanced matrix. *scaleWave* is W_scale as returned by MatrixReverseBalance.

MatrixBalance was added in Igor Pro 9.00.

Parameters

eigenvectorsWave must be single-precision or double-precision floating point, real or complex, and must contain no NaNs. MatrixReverseBalance returns an error if these conditions are not met.

Flags

/DSTM=*dest*
: Specifies the destination wave for the inverse-transformed eigenvectors. If you omit /DSTM, the output is saved in M_RBEigenvectors in the current data folder.

/FREE
: Create free destination wave when it is specified via /DSTM.

/J=*job*
: *job* is the type of backward transformation required. It is one of the following letters:

  N — *srcWave* is not permuted or scaled.

  P — *srcWave* is permuted but not scaled.

  S — *srcWave* is scaled but not permuted. The scaling applies a diagonal similarity transformation to make the norms of the various columns close to each other.

  B — *srcWave* is both scaled and permuted (default).

  You should use the same value for *job* as was used in the original balancing.

/LH={*low*,*high*}
: Specifies the zero-based low and high indices that were returned by MatrixBalance in V_min and V_max respectively.

/Z
: Suppresses error reporting. If you use /Z, check the V_Flag output variable to see if the operation succeeded.