

## Keywords in Context for the NAG Parallel Library

One-dimensional quadrature, <b>adaptive</b> , finite interval, allowing for badly ...	D01ATFP
One-dimensional quadrature, <b>adaptive</b> , finite interval, suitable for ...	D01AUFPP
One-dimensional quadrature, <b>adaptive</b> , finite interval, weight functions cos(...)	D01AXFP
Returns or sets unit number for <b>advisory</b> messages	X04ABF
Release of internally <b>allocated</b> memory	F11ZZFP
Safe range of real floating-point <b>arithmetic</b>	X02AMF
Safe range of complex floating-point <b>arithmetic</b>	X02ANF
Parameter of floating-point <b>arithmetic</b> model, $b$	X02BHF
Parameter of floating-point <b>arithmetic</b> model, $\epsilon_{\max}$	X02BLF
Parameter of floating-point <b>arithmetic</b> model, $\epsilon_{\min}$	X02BKF
Parameter of floating-point <b>arithmetic</b> model, $p$	X02BJF
Parameter of floating-point <b>arithmetic</b> model, ROUNDS	X02DJF
Solution of real symmetric <b>banded</b> linear system (Black Box)	F04HBFPP
Solution of complex Hermitian <b>banded</b> linear system (Black Box)	F04HZFP
(PDPBTRS) Solution of real symmetric <b>banded</b> linear system, matrix already factorized ...	F07HEFP
(PZPBTRS) Solution of complex Hermitian <b>banded</b> linear system, matrix already factorized ...	F07HSFP
In-place generation of complex Hermitian <b>banded</b> matrix in column block fashion, used ...	F01YWFPP
In-place generation of real symmetric <b>banded</b> matrix in column block fashion, used ...	F01YXFP
(PDPBTRF) Cholesky factorization of real symmetric <b>banded</b> matrix with no pivoting	F07HDFP
(PZPBTRF) Cholesky factorization of complex <b>banded</b> matrix with no-pivoting	F07HRFP
Hermitian	
... solver using preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b>	F11BBFP
... solver using preconditioned GMRES, CGS or <b>Bi-CGSTAB</b>	F11BSFP
... Jacobi, SOR or no preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> (Black Box)	F11DEFPP
... using block-Jacobi preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> (Black Box)	F11DHFP
... Jacobi, SOR or no preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> (Black Box)	F11DSFP
... using block-Jacobi preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> (Black Box)	F11DVFP
... eigenvalues of real symmetric tridiagonal matrix by <b>bisection</b>	F08JJFP
... block fashion, used with routines from Chapter F04 ( <b>Black Box</b> )	F01ZSFP
... block fashion, used with routines from Chapters F04 ( <b>Black Box</b> )	F01ZXFP
Solution of real linear system ( <b>Black Box</b> )	F04EBFP
Solution of complex linear equations ( <b>Black Box</b> )	F04ECFP
... of real symmetric positive-definite linear system ( <b>Black Box</b> )	F04FBFP
... of complex Hermitian positive-definite linear system ( <b>Black Box</b> )	F04FCFP
Solution of real linear least-squares problem ( <b>Black Box</b> )	F04GBFP
Solution of real symmetric banded linear system ( <b>Black Box</b> )	F04HBFPP
Solution of complex Hermitian banded linear system ( <b>Black Box</b> )	F04HZFP
Solution of real symmetric tridiagonal linear system ( <b>Black Box</b> )	F04JBFP
... of complex Hermitian tridiagonal linear system ( <b>Black Box</b> )	F04JZFP
... or no preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> ( <b>Black Box</b> )	F11DEFPP
... preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> ( <b>Black Box</b> )	F11DHFP
... or no preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> ( <b>Black Box</b> )	F11DSFP
... preconditioned RGMRES, CGS or <b>Bi-CGSTAB</b> ( <b>Black Box</b> )	F11DVFP
... Jacobi, SSOR or no preconditioned CG or SYMMLQ ( <b>Black Box</b> )	F11JEFP
... using block-Jacobi preconditioned CG or SYMMLQ ( <b>Black Box</b> )	F11JHFP
... block form, used with routines from Chapter F04 ( <b>Black Box</b> )	X04BGFP
... external file, used with routines from Chapter F04 ( <b>Black Box</b> )	X04BHFP
... block form, used with routines from Chapter F04 ( <b>Black Box</b> )	X04BVFP
... block fashion, used with routines from Chapter F04 ( <b>Black Box</b> )	X04BWFP
... logical processor grid (Library Grid) and returns the <b>BLACS</b> context	Z01AAFPP
Undefines logical processor grid and invalidates the <b>BLACS</b> context initialised by Z01AAFPP	Z01ABFP
Topology to be used by <b>BLACS</b> for broadcasting and global operations	Z01BEFP
... of real system of linear equations, involving a real <b>block diagonal</b> sparse matrix, represented in coordinate ...	F11DBFP
Solution of sparse symmetric linear system using <b>block-Jacobi</b> preconditioned CG or SYMMLQ (Black ...)	F11JHFP
... of real sparse nonsymmetric linear system using <b>block-Jacobi</b> preconditioned RGMRES, CGS or ...	F11DHFP
... of complex sparse non-Hermitian linear system using <b>block-Jacobi</b> preconditioned RGMRES, CGS or ...	F11DVFP
... non-Hermitian linear system, reverse-communication, <b>block-Jacobi</b> preconditioner generated by F11DTFP	F11DUFP
... reverse-communication, solver using preconditioned <b>CG</b> or SYMMLQ	F11GBFP
... system using Jacobi, SSOR or no preconditioned <b>CG</b> or SYMMLQ (Black Box)	F11JEFP
... linear system using block-Jacobi preconditioned <b>CG</b> or SYMMLQ (Black Box)	F11JHFP
... solver using preconditioned RGMRES, <b>CGS</b> or <b>Bi-CGSTAB</b>	F11BBFP
... solver using preconditioned RGMRES, <b>CGS</b> or <b>Bi-CGSTAB</b>	F11BSFP
... using Jacobi, SOR or no preconditioned RGMRES, <b>CGS</b> or <b>Bi-CGSTAB</b> (Black Box)	F11DEFPP
... system using block-Jacobi preconditioned RGMRES, <b>CGS</b> or <b>Bi-CGSTAB</b> (Black Box)	F11DHFP
... using Jacobi, SOR or no preconditioned RGMRES, <b>CGS</b> or <b>Bi-CGSTAB</b> (Black Box)	F11DSFP
... system using block-Jacobi preconditioned RGMRES, <b>CGS</b> or <b>Bi-CGSTAB</b> (Black Box)	F11DVFP
Specification of error <b>checking</b> level, can reduce the amount of checking ...	Z02EAFP
(PZPBTRF) <b>Cholesky</b> factorization of complex Hermitian ...	F07HRFP
(PZPOTRF) <b>Cholesky</b> factorization of complex Hermitian ...	F07FRFP
(PDPBTRF) <b>Cholesky</b> factorization of real symmetric banded ...	F07HDFP
(PDPOTRF) <b>Cholesky</b> factorization of real symmetric positive- ...	F07FDFP
(PDPTTRF) <b>Cholesky</b> factorization of real symmetric ...	F07JDFP
Row and <b>column</b> indices of the root processor within the ...	Z01BAFP
... generation of complex Hermitian banded matrix in <b>column block</b> fashion, used with routines from Chapter ...	F01YWFPP
In-place generation of real symmetric banded matrix in <b>column block</b> fashion, used with routines from Chapter ...	F01YXFP
In-place generation of complex vector in <b>column block</b> fashion, used with routines from Chapter ...	F01ZYFP
In-place generation of real vector in <b>column block</b> fashion, used with routines from Chapter ...	F01ZZFP
In-place generation of real matrix in <b>column block</b> fashion, used with routines from ...	F01ZRFP
In-place generation of complex matrix in <b>column block</b> fashion, used with routines from ...	F01ZWFP
Number of rows or <b>columns</b> of matrix held locally on a given ...	Z01CAFP
Creates an MPI <b>communicator</b> from a Library context	Z01ZBFP
(PZPTTRF) Factorization of <b>complex</b> Hermitian tridiagonal matrix with ...	F07JRFPP
... $LU$ factorization of local diagonal blocks of <b>complex</b> sparse matrix	F11DTFP
(PDTRCON) Estimates <b>condition</b> number of real triangular matrix	F07TGFPP
Outputs real dense vector, distributed <b>conformally</b> to a sparse matrix on a logical grid of ...	X04YAFP

Gather real vector distributed	<b>conformally</b> to matrix, used with routines from ...	F01ZPFP
In-place generation of real dense vector distributed	<b>conformally</b> to sparse matrix	F01YEFPP
Outputs complex vector, distributed	<b>conformally</b> to sparse matrix to a sequential file	X04YPFP
Scatter real vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01XEFP
Gather real vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01XFFP
Scatter integer vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01XGFP
Gather integer vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01XHFP
Scatter complex vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01XTFP
Gather complex vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01XUFP
... generation of complex dense vector distributed	<b>conformally</b> to sparse matrix, used with routines ...	F01YTFP
Creates an MPI communicator from a Library	<b>context</b>	Z01ZBFP
Identifies logical processors in	<b>context</b> in the two-dimensional grid declared by ...	Z01BBFP
Scatter real sparse matrix, stored in	<b>coordinate</b> storage format, using cyclic row block ...	F01XAFP
Scatter complex sparse matrix, stored in	<b>coordinate</b> storage format, using cyclic row block ...	F01XPFP
... blocks of a real sparse matrix, represented in	<b>coordinate storage</b> format, distributed on a logical ...	F11DAFP
... a real block diagonal sparse matrix, represented in	<b>coordinate storage</b> format, distributed on a logical ...	F11DBFP
Returns information on	<b>coordinates</b> in Library Grid set up by Z01AAFP	Z01ZAFP
Largest permissible argument for sin and	<b>cos</b>	X02AHF
... adaptive, finite interval, weight functions	$\cos(\omega x)$ or $\sin(\omega x)$	D01AXFP
... matrix, stored in coordinate storage format, using	<b>cyclic row block</b> distribution	F01XAFP
In-place generation of real sparse matrix using	<b>cyclic row block</b> distribution	F01YAFP
... generation of complex sparse matrix according to	<b>cyclic row block</b> distribution (suitable for repeated ...	F01YQFP
In-place generation of real sparse matrix using	<b>cyclic row block</b> distribution (suitable for repeated ...	F01XBFP
... matrix, stored in coordinate storage format, using	<b>cyclic row block</b> distribution, used with routines from ...	F01XPFP
... generation of complex sparse matrix according to	<b>cyclic row block</b> distribution, used with routines from ...	F01YPFP
... set-up routine for real sparse matrix distributed in	<b>cyclic row block</b> form	F11ZAFP
... set-up routine for real sparse matrix distributed in	<b>cyclic row block</b> form (suitable for repeated sparsity ...	F11ZBFP
... routine for complex sparse matrix, distributed in	<b>cyclic row block</b> form (suitable for repeated sparsity ...	F11ZPFP
Outputs general complex matrix, stored in	<b>cyclic two-dimensional</b> block fashion, used with ...	X04BWFPP
... matrix, from external file, into array distributed in	<b>cyclic two-dimensional</b> form, used with routines ...	X04BCFP
... given processor when the matrix is distributed in the	<b>cyclic two-dimensional block</b> fashion (NUMROC)	Z01CAFP
Outputs real general matrix, stored in	<b>cyclic two-dimensional block</b> fashion, to an external ...	X04BDFP
Outputs complex general matrix, stored in	<b>cyclic two-dimensional block</b> fashion to an external ...	X04BSFP
Outputs general real matrix, stored in	<b>cyclic two-dimensional block</b> fashion, to external ...	X04BHFP
In-place generation of real matrix in	<b>cyclic two-dimensional block</b> fashion, used with ...	F01ZSFP
In-place generation of complex matrix in	<b>cyclic two-dimensional block</b> fashion, used with ...	F01ZXFP
In-place generation of real matrix in	<b>cyclic two-dimensional block</b> fashion, used with ...	F01ZQFP
In-place generation of complex matrix in	<b>cyclic two-dimensional block</b> fashion, used with ...	F01ZVFP
... matrix from external file into array distributed in	<b>cyclic two-dimensional block</b> form, used with routines ...	X04BGFP
... from an external file into an array distributed in	<b>cyclic two-dimensional block</b> form, used with routines ...	X04BVFP
... from an external file into array distributed in	<b>cyclic two-dimensional block</b> form, used with routines ...	X04BRFP
Gather real matrix distributed in	<b>cyclic two-dimensional block</b> format, used with routines ...	F01WBFP
Gather complex matrix distributed in	<b>cyclic two-dimensional block</b> format, used with routines ...	F01WHFP
... from the root processor to the Library Grid using	<b>cyclic two-dimensional block</b> format, used with ...	F01WFP
... from the root processor to the Library Grid using	<b>cyclic two-dimensional block</b> format, used with ...	F01WVFP
... regarded as submatrix of matrix distributed in	<b>cyclic two-dimensional block</b> format, used with ...	F01WAFP
Gather complex matrix distributed in	<b>cyclic two-dimensional block</b> format, used with ...	F01WGFP
... from the root processor to the Library Grid using	<b>cyclic two-dimensional block</b> format, used with ...	F01WNFP
... from the root processor to the Library Grid using	<b>cyclic two-dimensional block</b> format, used with ...	F01WUFP
Singular Value	<b>Decomposition</b> (SVD) of complex matrix, one-sided ...	F02WRFPP
Singular Value	<b>Decomposition</b> (SVD) of real matrix, one-sided Jacobi ...	F02WQFP
Outputs real	<b>dense</b> vector, distributed conformally to a ...	X04YAFP
In-place generation of real	<b>dense</b> vector distributed conformally to sparse ...	F01YEFPP
In-place generation of complex	<b>dense</b> vector distributed conformally to sparse ...	F01YTFP
Direct or inverse one-dimensional	<b>discrete</b> Fourier transform of a complex sequence	C06MCFPP
Direct or inverse three-dimensional	<b>discrete</b> Fourier transform of a complex sequence	C06MXFP
... of real vector from local indexing based order to	<b>distribution based</b> order	F11YCFPP
... of complex vector from local indexing based order to	<b>distribution based</b> order	F11YQFP
Permutation of real vector from	<b>distribution based</b> order to local indexing based ...	F11YBFP
Permutation of complex vector from	<b>distribution based</b> order to local indexing based ...	F11YPFP
	<b>Eigenvalues</b> and eigenvectors of complex Hermitian ...	F02FRFP
	<b>Eigenvalues</b> and eigenvectors of real symmetric ...	F02FQFP
(PDSTEBZ) All or selected	<b>eigenvalues</b> of real symmetric tridiagonal matrix by ...	F08JJFP
... tridiagonal matrix by inverse iteration, storing	<b>eigenvectors</b> in complex array	F08JXFP
... tridiagonal matrix by inverse iteration, storing	<b>eigenvectors</b> in real array	F08JKFP
Eigenvalues and	<b>eigenvectors</b> of complex Hermitian matrix, one-sided ...	F02FRFP
Eigenvalues and	<b>eigenvectors</b> of real symmetric matrix, one-sided ...	F02FQFP
(PZSTEIN) Selected	<b>eigenvectors</b> of real symmetric tridiagonal matrix by ...	F08JXFP
(PDSTEIN) Selected	<b>eigenvectors</b> of real symmetric tridiagonal matrix by ...	F08JKFP
	<b>Element-wise</b> maximum or minimum in absolute value ...	F01CPFP
Specification of	<b>error</b> checking level, can reduce the amount of ...	Z02EAFP
Returns or sets unit number for	<b>error</b> message	X04AAF
(PDTRCON)	<b>Estimates</b> condition number of real triangular ...	F07TGFPP
	<b>Euler's</b> constant, $\gamma$	X01ABF
... real number from the interval $[a,b)$ ,	<b>exponential</b> distribution	G05AEFP
... real numbers from the interval $(a,b)$ ,	<b>exponential</b> distribution	G05BEFP
... Form all or part of an orthogonal $Q$ from $QR$	<b>factorization</b> determined by F08AEFP (PDGEQRF)	F08AFFPP
(PZUNGQR) Form all or part of a unitary $Q$ from $QR$	<b>factorization</b> determined by F08ASFP (PZGEQRF)	F08ATFP
(PZGETRF) $LU$	<b>factorization</b> of complex general matrix	F07ARFP
(PZGEQRF) $QR$	<b>factorization</b> of complex general rectangular ...	F08ASFP
(PZPBTRF) Cholesky	<b>factorization</b> of complex Hermitian banded matrix with ...	F07HRFP
(PZPOTRF) Cholesky	<b>factorization</b> of complex Hermitian positive-definite ...	F07FRFP
(PZPTTRF)	<b>Factorization</b> of complex Hermitian tridiagonal matrix ...	F07JRFP
... linear system, reverse-communication, incomplete $LU$	<b>factorization</b> of local or overlapping diagonal blocks, ...	F11DFFPP
(PDGETRF) $LU$	<b>factorization</b> of real general matrix	F07ADFPP
(PDGEQRF) $QR$	<b>factorization</b> of real general rectangular matrix	F08AEFP
(PDPBTRF) Cholesky	<b>factorization</b> of real symmetric banded matrix with no ...	F07HDFPP

(PDPOTRF) Cholesky	<b>factorization</b> of real symmetric positive-definite ...	F07FDFP
(PDPOTRF) Cholesky	<b>factorization</b> of real symmetric tridiagonal matrix ...	F07JDFP
Incomplete <i>LU</i>	<b>factorization</b> of the local diagonal blocks of a real ...	F11DAFP
... positive-definite linear system, matrix already	<b>factorized</b> by F07FDFP (PDPOTRF)	F07FEFP
... positive-definite linear system, matrix already	<b>factorized</b> by F07FRFP (PZPOTRF)	F07FSFP
... Hermitian banded linear system, matrix already	<b>factorized</b> by F07HRFP (PZPBTRF)	F07HSFP
One-dimensional quadrature, adaptive,	<b>finite</b> interval, allowing for badly behaved ...	D01ATFP
One-dimensional quadrature, adaptive,	<b>finite</b> interval, suitable for oscillating ...	D01AUFP
One-dimensional quadrature, adaptive,	<b>finite</b> interval, weight functions $\cos(\omega \dots$	D01AXFP
Two-dimensional quadrature,	<b>finite</b> region	D01DAFP
Safe range of real	<b>floating-point</b> arithmetic	X02AMF
Safe range of complex	<b>floating-point</b> arithmetic	X02ANF
Parameter of	<b>floating-point</b> arithmetic model, $b$	X02BHF
Parameter of	<b>floating-point</b> arithmetic model, $e_{\max}$	X02BLF
Parameter of	<b>floating-point</b> arithmetic model, $e_{\min}$	X02BKF
Parameter of	<b>floating-point</b> arithmetic model, $p$	X02BJF
Parameter of	<b>floating-point</b> arithmetic model, ROUNDS	X02DJF
Direct or inverse two-dimensional	<b>Fourier</b> transform of a complex sequence	C06FUFP
Direct or inverse one-dimensional discrete	<b>Fourier</b> transform of a complex sequence	C06MCFP
Direct or inverse three-dimensional discrete	<b>Fourier</b> transform of a complex sequence	C06MXFP
Euler's constant, $\gamma$		X01ABF
	<b>Gather</b> complex matrix distributed in cyclic two- ...	F01WHFP
	<b>Gather</b> complex matrix distributed in cyclic two- ...	F01WGFP
	<b>Gather</b> complex vector distributed conformally ...	F01XUFP
	<b>Gather</b> integer vector distributed conformally ...	F01XHFP
	<b>Gather</b> real matrix distributed in cyclic ...	F01WBFP
	<b>Gather</b> real matrix, regarded as submatrix of ...	F01WAFP
	<b>Gather</b> real vector distributed conformally to ...	F01ZPFP
	<b>Gather</b> real vector distributed conformally to ...	F01XFFP
Unconstrained minimum of a sum of squares,	<b>Gauss–Newton</b> algorithm using function values only ...	E04FDFP
... of a general nonlinear function with unconstrained,	<b>Gauss–Newton</b> algorithm using function values only ...	E04JBFP
Reads	<b>general</b> complex matrix from an external file ...	X04BVFP
Outputs	<b>general</b> complex matrix, stored in cyclic ...	X04BWFP
Outputs set of real	<b>general</b> matrices distributed on a ...	X04BFFP
Outputs set of complex	<b>general</b> matrices distributed on a ...	X04BUFP
Reads complex	<b>general</b> matrix from an external file into array ...	X04BRFP
Reads real	<b>general</b> matrix, from external file, into array ...	X04BCFP
Outputs real	<b>general</b> matrix, stored in cyclic two-dimensional ...	X04BDFP
Outputs complex	<b>general</b> matrix, stored in cyclic two-dimensional ...	X04BSFP
Minimum of a	<b>general</b> nonlinear function with unconstrained, ...	E04JBFP
Reads	<b>general</b> real matrix from external file into ...	X04BGFP
Outputs	<b>general</b> real matrix, stored in cyclic ...	X04BHFP
	<b>General</b> set-up routine for complex sparse matrix, ...	F11ZPFP
	<b>General</b> set-up routine for real sparse matrix ...	F11ZAFP
	<b>General</b> set-up routine for real sparse matrix ...	F11ZBFP
	<b>Generates</b> an $l$ by $m$ by $n$ three-dimensional ...	F01ZHFP
In-place	<b>generation</b> of complex matrix in cyclic ...	F01ZXFP
In-place	<b>generation</b> of complex dense vector distributed ...	F01YTFP
In-place	<b>generation</b> of complex Hermitian banded matrix in ...	F01YWFP
In-place	<b>generation</b> of complex matrix in column block ...	F01ZWFP
In-place	<b>generation</b> of complex matrix in cyclic ...	F01ZVFP
In-place	<b>generation</b> of complex matrix in row block fashion ...	F01YZFP
In-place	<b>generation</b> of complex matrix in row block fashion, ...	F01ZNFP
In-place	<b>generation</b> of complex sparse matrix according to ...	F01YQFP
In-place	<b>generation</b> of complex sparse matrix according to ...	F01YPPFP
In-place	<b>generation</b> of complex vector in column block ...	F01ZYFP
In-place	<b>generation</b> of real dense vector distributed ...	F01YFP
In-place	<b>generation</b> of real matrix in column block fashion, ...	F01ZRFP
In-place	<b>generation</b> of real matrix in cyclic two-dimensional ...	F01ZSFP
In-place	<b>generation</b> of real matrix in cyclic two-dimensional ...	F01ZQFP
In-place	<b>generation</b> of real matrix in row block fashion on a ...	F01YYFP
In-place	<b>generation</b> of real matrix in row block fashion, ...	F01ZMFP
In-place	<b>generation</b> of real sparse matrix using cyclic row ...	F01YAFP
In-place	<b>generation</b> of real sparse matrix using cyclic row ...	F01YBFP
In-place	<b>generation</b> of real symmetric banded matrix in ...	F01YXFP
In-place	<b>generation</b> of real vector in column block fashion, ...	F01ZZFP
Selects random number	<b>generator</b> and initialises seeds to give repeatable ...	G05ABFP
... reverse-communication, solver using preconditioned	<b>GMRES</b> , CGS or Bi-CGSTAB	F11BSFP
Solution of complex	<b>Hermitian</b> banded linear system (Black Box)	F04HZFP
(PZPBTRS) Solution of complex	<b>Hermitian</b> banded linear system, matrix already ...	F07HSFP
In-place generation of complex	<b>Hermitian</b> banded matrix in column block fashion, ...	F01YWFP
(PZPBTRF) Cholesky factorization of complex	<b>Hermitian</b> banded matrix with no-pivoting	F07HRFP
Eigenvalues and eigenvectors of complex	<b>Hermitian</b> matrix, one-sided Jacobi method	F02FRFP
(PZHETRD) Unitary reduction of complex	<b>Hermitian</b> matrix to real symmetric tridiagonal ...	F08FSFP
Solution of complex	<b>Hermitian</b> positive-definite linear system (Black ...	F04FCFP
(PZPOTRS) Solution of complex	<b>Hermitian</b> positive-definite linear system, matrix ...	F07FSFP
(PZPOTRF) Cholesky factorization of complex	<b>Hermitian</b> positive-definite matrix	F07FRFP
Solution of complex	<b>Hermitian</b> tridiagonal linear system (Black Box)	F04JZFP
(PZPTTRF) Factorization of complex	<b>Hermitian</b> tridiagonal matrix with no-pivoting	F07JRF
Computes	<b>incomplete LU</b> factorization of local diagonal ...	F11DTFP
	<b>Incomplete LU</b> factorization of the local diagonal ...	F11DAFP
... of real vector from distribution based order to local	<b>indexing based</b> order	F11YBFP
... complex vector from distribution based order to local	<b>indexing based</b> order	F11YPPFP
Permutation of real vector from local	<b>indexing based</b> order to distribution based order	F11YCFP
Permutation of complex vector from local	<b>indexing based</b> order to distribution based order	F11YQFP
Selects random number generator and	<b>initialises</b> seeds to give repeatable sequence	G05BBFP
	<b>In-place</b> generation of complex dense vector ...	F01YTFP

	<b>In-place</b> generation of complex sparse matrix ...	F01YQFP
	<b>In-place</b> generation of complex sparse matrix ...	F01YPPFP
	<b>In-place</b> generation of real dense vector ...	F01YEFP
	<b>In-place</b> generation of real sparse matrix using ...	F01YAFP
	<b>In-place</b> generation of real sparse matrix using ...	F01YBFP
	<b>integer</b>	X02BBF
	Largest representable <b>integer</b>	F08JXFP
... eigenvectors of real symmetric tridiagonal matrix by	<b>inverse</b> iteration, storing eigenvectors in ...	F08JKFP
... eigenvectors of real symmetric tridiagonal matrix by	<b>inverse</b> iteration, storing eigenvectors in real ...	F11DKFP
	Apply iterations of relaxed <b>Jacobi</b> iterative method to a real sparse linear ...	F11DXFP
	Apply iterations of relaxed <b>Jacobi</b> iterative method to complex sparse ...	F02QFP
... and eigenvectors of real symmetric matrix, one-sided	<b>Jacobi</b> method	F02FRFP
... eigenvectors of complex Hermitian matrix, one-sided	<b>Jacobi</b> method	F02WQFP
... Value Decomposition (SVD) of real matrix, one-sided	<b>Jacobi</b> method	F02WRFP
... Decomposition (SVD) of complex matrix, one-sided	<b>Jacobi</b> method	F11DKFP
... method to a real sparse linear system, used mostly as	<b>Jacobi</b> preconditioner for real sparse matrix	F11DEFP
... of real sparse nonsymmetric linear system using	<b>Jacobi</b> , SOR or no preconditioned RGMRES, CGS or ...	F07HSFP
... of complex sparse non-Hermitian linear system using	<b>Jacobi</b> , SOR or no preconditioned RGMRES, CGS or ...	F11JEFP
Solution of real sparse symmetric linear system using	<b>Jacobi</b> , SSOR or no preconditioned CG or SYMMLQ ...	X02AHF
	<b>Largest</b> permissible argument for sin and cos	X02ALF
	<b>Largest</b> positive model number	X02BBF
	<b>Largest</b> representable integer	F04GBFP
Solution of real linear	<b>least-squares</b> problem (Black Box)	Z01ZBFP
Creates an MPI communicator from a	<b>Library</b> context	Z01ZAFP
Returns information on coordinates in	<b>Library Grid</b> set up by Z01AAFP	F11DCF
Black Box routine for sparse system of	<b>linear</b> equations	F04ECFP
Solution of complex	<b>linear</b> equations (Black Box)	F11DBFP
Solution of real system of	<b>linear</b> equations, involving a real block ...	F04GBFP
Solution of real	<b>linear</b> least-squares problem (Black Box)	F04JBFP
Solution of real symmetric tridiagonal	<b>linear</b> system (Black Box)	F04EBFP
Solution of real	<b>linear system</b> (Black Box)	F04FBFP
Solution of real symmetric positive-definite	<b>linear system</b> (Black Box)	F04FCFP
Solution of complex Hermitian positive-definite	<b>linear system</b> (Black Box)	F04HBF
Solution of real symmetric banded	<b>linear system</b> (Black Box)	F04HZFP
Solution of complex Hermitian banded	<b>linear system</b> (Black Box)	F04JZFP
Solution of complex Hermitian tridiagonal	<b>linear system</b> (Black Box)	F07AEFP
(PDGETRS) Solution of real	<b>linear system</b> , matrix already factorized by F07ADFP ...	F07ASF
(PZGETRS) Solution of complex	<b>linear system</b> , matrix already factorized by F07ARFP ...	F07FEFP
... Solution of real symmetric positive-definite	<b>linear system</b> , matrix already factorized by F07DFFP ...	F07FSFP
... Solution of complex Hermitian positive-definite	<b>linear system</b> , matrix already factorized by F07FRFP ...	F07HEFP
(PDPBTRS) Solution of real symmetric banded	<b>linear system</b> , matrix already factorized by F07HDFP ...	F07HSFP
(PZPBTRS) Solution of complex Hermitian banded	<b>linear system</b> , matrix already factorized by F07HRFP ...	F07JEF
(PDPTTRS) Solution of real symmetric tridiagonal	<b>linear system</b> , matrix already factorized by F07JDFP ...	F07JSFP
(PZPTTRS) Solution of real symmetric tridiagonal	<b>linear system</b> , matrix already factorized by F07JRF	F11DUF
Complex sparse non-Hermitian	<b>linear system</b> , reverse-communication, block-Jacobi ...	F11BCFP
Real sparse nonsymmetric	<b>linear system</b> , reverse-communication, diagnostic for ...	F11BTF
Complex sparse non-Hermitian	<b>linear system</b> , reverse-communication, diagnostic for ...	F11GCF
Real sparse symmetric	<b>linear system</b> , reverse-communication, solver using ...	F11DFF
Real sparse nonsymmetric	<b>linear system</b> , reverse-communication, incomplete LU ...	F11DGF
Real sparse nonsymmetric	<b>linear system</b> , reverse-communication, preconditioner ...	F11BAFP
Complex sparse non-Hermitian	<b>linear system</b> , reverse-communication, set-up for ...	F11BRFP
Real sparse symmetric	<b>linear system</b> , reverse-communication, set-up for ...	F11GAFP
Real sparse symmetric	<b>linear system</b> , reverse-communication, solver using ...	F11GBFP
Complex sparse non-Hermitian	<b>linear system</b> , reverse-communication, solver using ...	F11BSFP
Real sparse nonsymmetric	<b>linear system</b> , reverse-communication, solver using ...	F11BBFP
... of relaxed Jacobi iterative method to complex sparse	<b>linear system</b> , used mostly as Jacobi preconditioner ...	F11DXFP
... of relaxed Jacobi iterative method to a real sparse	<b>linear system</b> , used mostly as Jacobi preconditioner ...	F11DKFP
Apply iterations of SOR method to the complex sparse	<b>linear system</b> , used mostly as SOR preconditioner for ...	F11DRFP
Apply iterations of SOR method to real sparse	<b>linear system</b> , used mostly as SOR preconditioner for ...	F11DDFP
Solution of sparse symmetric	<b>linear system</b> using block-Jacobi preconditioned CG or ...	F11JHFP
Solution of real sparse nonsymmetric	<b>linear system</b> using block-Jacobi preconditioned ...	F11DHFP
Solution of complex sparse non-Hermitian	<b>linear system</b> using block-Jacobi preconditioned ...	F11DVFP
Solution of real sparse nonsymmetric	<b>linear system</b> using Jacobi, SOR or no preconditioned ...	F11DEF
Solution of complex sparse non-Hermitian	<b>linear system</b> using Jacobi, SOR or no preconditioned ...	F11DSFP
Solution of real sparse symmetric	<b>linear system</b> using Jacobi, SSOR or no preconditioned ...	F11JEF
... of real vector from distribution based order to	<b>local</b> indexing based order	F11YBFP
... of complex vector from distribution based order to	<b>local</b> indexing based order	F11YPPFP
Permutation of complex vector from	<b>local</b> indexing based order to distribution ...	F11YQFP
Computes incomplete LU factorization of local diagonal blocks ...		F11DTFP
Incomplete LU factorization of the local diagonal ...		F11DAFP
(PZGETRF) LU factorization of complex general matrix		F07ARFP
... linear system, reverse-communication, incomplete LU factorization of local or overlapping ...		F11DFF
(PDGETRF) LU factorization of real general matrix		F07ADFP
<b>Machine</b> precision		X02AJF
<b>Matrix-vector</b> multiplication for complex sparse ...		F11XPFP
<b>Matrix-vector</b> multiplication for real sparse ...		F11XBFP
<b>Maximum</b> number of decimal digits that can be ...		X02BEF
Release of internally allocated	<b>memory</b>	F11ZZFP
Unconstrained	<b>Minimum</b> of a general nonlinear function with ...	E04JBFP
Parameter of floating-point arithmetic	<b>model</b> , <i>b</i>	E04DFFP
Parameter of floating-point arithmetic	<b>model</b> , $e_{\max}$	X02BHF
Parameter of floating-point arithmetic	<b>model</b> , $e_{\min}$	X02BLF
Smallest positive	<b>model</b> number	X02BKF
Largest positive	<b>model</b> number	X02AKF
Parameter of floating-point arithmetic	<b>model</b> , <i>p</i>	X02ALF
Parameter of floating-point arithmetic	<b>model</b> , ROUNDS	X02BJF
		X02DJF

	Creates an <b>MPI</b> communicator from a Library context	Z01ZBFP
Information about	<b>MPI</b> tasks	Z01BGFP
	Generates <b>multi-colour</b> ordering for complex sparse matrix with ...	F11ZUFP
	Generates <b>multi-colour</b> ordering for real sparse matrix with ...	F11ZGFP
	<b>Multi-dimensional</b> quadrature, general product region, ...	D01GCFP
... outside the default library mechanism, allows	<b>Multi-dimensional</b> quadrature, hyper-rectangle, ...	D01FAFP
	<b>multigridding</b> , used in more advanced applications	Z01AEFP
Complex sparse	<b>non-Hermitian</b> linear system, reverse-communication, ...	F11DUFP
Complex sparse	<b>non-Hermitian</b> linear system, reverse-communication, ...	F11BTFP
Complex sparse	<b>non-Hermitian</b> linear system, reverse-communication, ...	F11BRFP
Complex sparse	<b>non-Hermitian</b> linear system, reverse-communication, ...	F11BSFP
Solution of complex sparse	<b>non-Hermitian</b> linear system using block-Jacobi ...	F11DVFP
Solution of complex sparse	<b>non-Hermitian</b> linear system using Jacobi, SOR or no ...	F11DSFP
	Minimum of a general <b>nonlinear</b> function with unconstrained, ...	E04JBFP
	Real sparse <b>nonsymmetric</b> linear system, reverse-communication, ...	F11BCFP
	Real sparse <b>nonsymmetric</b> linear system, reverse-communication, ...	F11DFFP
	Real sparse <b>nonsymmetric</b> linear system, reverse-communication, ...	F11DGFP
	Real sparse <b>nonsymmetric</b> linear system, reverse-communication, ...	F11BAFP
	Real sparse <b>nonsymmetric</b> linear system, reverse-communication, ...	F11BBFP
Solution of real sparse	<b>nonsymmetric</b> linear system using block-Jacobi ...	F11DHFP
Solution of real sparse	<b>nonsymmetric</b> linear system using Jacobi, SOR or no ...	F11DEFP
... real number from the interval $[a,b]$ ,	<b>Normal</b> distribution	G05ADFP
... real numbers from the interval $(a,b)$ ,	<b>Normal</b> distribution	G05BDFP
	Direct or inverse <b>one-dimensional</b> discrete Fourier transform of a ...	C06MCFP
... generation of real matrix in row block fashion on a	<b>one-dimensional</b> grid of processors, used with routines ...	F01YYFP
... of complex matrix in row block fashion on a	<b>one-dimensional</b> grid of processors, used with routines ...	F01YZFP
	<b>One-dimensional</b> quadrature, adaptive, finite interval, ...	D01ATFP
	<b>One-dimensional</b> quadrature, adaptive, finite interval, ...	D01AUFP
	<b>One-dimensional</b> quadrature, adaptive, finite interval, ...	D01AXFP
	Generates multi-colour <b>ordering</b> for complex sparse matrix with symmetric ...	F11ZUFP
	Generates multi-colour <b>ordering</b> for real sparse matrix with symmetric ...	F11ZGFP
(PDORGQR) Form all or part of an	<b>orthogonal</b> $Q$ from $QR$ factorization determined ...	F08AFFP
(PDSYTRD)	<b>Orthogonal</b> reduction of real symmetric matrix to ...	F08FEFP
(PDORMQR) Apply the	<b>orthogonal</b> transformation determined by F08AEFP ...	F08AGFP
(PDORMTR) Apply	<b>orthogonal</b> transformation determined by F08FEFP ...	F08FGFP
	<b>Outputs</b> complex matrix stored in row block fashion	X04BZFP
... incomplete $LU$ factorization of local or	<b>overlapping</b> diagonal blocks, used mostly as ...	F11DFFP
... for real sparse matrix with symmetric sparsity	<b>pattern</b> , distributed in row block form	F11ZGFP
... for complex sparse matrix with symmetric sparsity	<b>pattern</b> , distributed in row block form.	F11ZUFP
	<b>Permutation</b> of complex vector from distribution ...	F11YPPFP
	<b>Permutation</b> of complex vector from local indexing ...	F11YQFP
	<b>Permutation</b> of non-zero entries of complex sparse ...	F11YNFP
	<b>Permutation</b> of non-zero entries of real sparse ...	F11YAFP
	<b>Permutation</b> of real vector from distribution based ...	F11YBFP
	<b>Permutation</b> of real vector from local indexing based ...	F11YCFP
	$\pi$	X01AAF
	Solution of real symmetric <b>positive-definite</b> linear system (Black Box)	F04FBFP
	Solution of complex Hermitian <b>positive-definite</b> linear system (Black Box)	F04FCFP
(PDPOTRS) Solution of real symmetric	<b>positive-definite</b> linear system, matrix already ...	F07FEFP
(PZPOTRS) Solution of complex Hermitian	<b>positive-definite</b> linear system, matrix already ...	F07SFP
(PDPOTRF) Cholesky factorization of real symmetric	<b>positive-definite</b> matrix	F07DFFP
... Cholesky factorization of complex Hermitian	<b>positive-definite</b> matrix	F07FRFP
	Machine <b>precision</b>	X02AJF
... linear system, reverse-communication, solver using	<b>preconditioned</b> CG or SYMMLQ	F11GBFP
... of sparse symmetric linear system using block-Jacobi	<b>preconditioned</b> CG or SYMMLQ (Black Box)	F11JHFP
... linear system, reverse-communication, solver using	<b>preconditioned</b> GMRES, CGS or Bi-CGSTAB	F11BSFP
... linear system, reverse-communication, solver using	<b>preconditioned</b> RGMRES, CGS or Bi-CGSTAB	F11BBFP
... nonsymmetric linear system using Jacobi, SOR or no	<b>preconditioned</b> RGMRES, CGS or Bi-CGSTAB ...	F11DEFP
... sparse nonsymmetric linear system using block-Jacobi	<b>preconditioned</b> RGMRES, CGS or Bi-CGSTAB ...	F11DHFP
... non-Hermitian linear system using Jacobi, SOR or no	<b>preconditioned</b> RGMRES, CGS or Bi-CGSTAB ...	F11DSFP
... sparse non-Hermitian linear system using block-Jacobi	<b>preconditioned</b> RGMRES, CGS or Bi-CGSTAB ...	F11DVFP
... the complex sparse linear system, used mostly as SOR	<b>preconditioner</b> for complex sparse matrix	F11DRFP
... complex sparse linear system, used mostly as Jacobi	<b>preconditioner</b> for complex sparse matrix	F11DXFP
... to real sparse linear system, used mostly as SOR	<b>preconditioner</b> for real sparse matrix	F11DDFP
... diagonal blocks, used mostly as incomplete $LU$	<b>preconditioner</b> for real sparse matrix	F11DFFP
... nonsymmetric linear system, reverse-communication,	<b>preconditioner</b> for real sparse matrix	F11DGFP
... to a real sparse linear system, used mostly as Jacobi	<b>preconditioner</b> for real sparse matrix	F11DKFP
... linear system, reverse-communication, block-Jacobi	<b>preconditioner</b> generated by F11DTFP	F11DUFP
... matrices distributed on a two-dimensional logical	<b>processor</b> grid, used with routines from Chapter ...	X04BUFP
Multi-dimensional quadrature, general	<b>product</b> region, number-theoretic method	D01GCFP
Function returning	<b>pseudo-random</b> integer from the interval $[ia,ib)$ , ...	G05AZFP
	<b>Pseudo-random</b> integers from the interval $(ia,ib)$ , ...	G05BZFP
Function returning	<b>pseudo-random</b> real number from the interval $(0,1)$	G05AAF
Function returning	<b>pseudo-random</b> real number from the interval $[a,b)$ , ...	G05AEFP
Function returning	<b>pseudo-random</b> real number from the interval $(a,b)$ , ...	G05ADFP
Function returning	<b>pseudo-random</b> real number from the interval $[a,b)$ , ...	G05ACFP
	<b>Pseudo-random</b> real numbers from the interval $(0,0)$ , ...	G05BAFP
	<b>Pseudo-random</b> real numbers from the interval $(a,b)$ , ...	G05BEFP
	<b>Pseudo-random</b> real numbers from the interval $(a,b)$ , ...	G05BDFP
	<b>Pseudo-random</b> real numbers from the interval $(a,b)$ , ...	G05BCFP
	$QR$ factorization determined by F08AEFP ...	F08AFFP
(PDORGQR) Form all or part of an orthogonal $Q$ from	$QR$ factorization determined by F08ASFP ...	F08ATFP
(PZUNGQR) Form all or part of a unitary $Q$ from	$QR$ factorization of complex general ...	F08ASFP
	(PZGEQRF) $QR$ factorization of complex general ...	F08AEFP
	(PDGEQRF) $QR$ factorization of real general ...	D01ATFP
One-dimensional	<b>quadrature</b> , adaptive, finite interval, allowing for ...	D01AUFP
One-dimensional	<b>quadrature</b> , adaptive, finite interval, suitable for ...	D01AXFP
One-dimensional	<b>quadrature</b> , adaptive, finite interval, weight ...	D01AXFP

Two-dimensional	<b>quadrature</b> , finite region	D01DAFP
Multi-dimensional	<b>quadrature</b> , general product region, ...	D01GCFP
Multi-dimensional	<b>quadrature</b> , hyper-rectangle, adaptive	D01FAFP
Selects	<b>random</b> number generator and initialises seeds ...	G05ABFP
Selects	<b>random</b> number generator and initialises seeds ...	G05BBFP
Safe	<b>range</b> of complex floating-point arithmetic	X02ANF
Safe	<b>range</b> of real floating-point arithmetic	X02AMF
(PDGEQRF) <i>QR</i> factorization of real general	<b>rectangular</b> matrix	F08AEFP
(PZGEQRF) <i>QR</i> factorization of complex general	<b>rectangular</b> matrix	F08ASFP
Complex sparse non-Hermitian linear system,	<b>reverse-communication</b> , block-Jacobi preconditioner ...	F11DUFP
Real sparse nonsymmetric linear system,	<b>reverse-communication</b> , diagnostic for F11BBFP	F11BCFP
Complex sparse non-Hermitian linear system,	<b>reverse-communication</b> , diagnostic for F11BSFP	F11BTFP
Real sparse symmetric linear system,	<b>reverse-communication</b> , diagnostic for F11GBFP	F11GCFP
Real sparse nonsymmetric linear system,	<b>reverse-communication</b> , incomplete <i>LU</i> factorization ...	F11DFFP
Real sparse nonsymmetric linear system,	<b>reverse-communication</b> , preconditioner for real sparse ...	F11DGFP
Real sparse nonsymmetric linear system,	<b>reverse-communication</b> , set-up for F11BBFP	F11BAFP
Complex sparse non-Hermitian linear system,	<b>reverse-communication</b> , set-up for F11BSFP	F11BRFP
Real sparse symmetric linear system,	<b>reverse-communication</b> , set-up for F11GBFP	F11GAFP
Real sparse symmetric linear system,	<b>reverse-communication</b> , solver using preconditioned ...	F11GBFP
Complex sparse non-Hermitian linear system,	<b>reverse-communication</b> , solver using preconditioned ...	F11BSFP
Real sparse nonsymmetric linear system,	<b>reverse-communication</b> , solver using preconditioned ...	F11BBFP
... reverse-communication, solver using preconditioned	<b>RGMRES</b> , CGS or Bi-CGSTAB	F11BBFP
... linear system using Jacobi, SOR or no preconditioned	<b>RGMRES</b> , CGS or Bi-CGSTAB (Black Box)	F11DBFP
... linear system using block-Jacobi preconditioned	<b>RGMRES</b> , CGS or Bi-CGSTAB (Black Box)	F11DHFP
... linear system using Jacobi, SOR or no preconditioned	<b>RGMRES</b> , CGS or Bi-CGSTAB (Black Box)	F11DSFP
... linear system using block-Jacobi preconditioned	<b>RGMRES</b> , CGS or Bi-CGSTAB (Black Box)	F11DVFP
	<b>Root</b> processor identifier	Z01ACFP
Row and column indices of the	<b>root</b> processor within the logical grid	Z01BAFP
	<b>Row</b> and column indices of the root processor ...	Z01BAFP
Computes number of rows of a	<b>row block</b> distributed matrix owned by a processor	Z01CFFP
Outputs real matrix stored in	<b>row block</b> fashion	X04BXFP
Outputs complex matrix stored in	<b>row block</b> fashion	X04BZFP
In-place generation of real matrix in	<b>row block</b> fashion on a one-dimensional grid of ...	F01YYFP
In-place generation of complex matrix in	<b>row block</b> fashion on a one-dimensional grid of ...	F01YZFP
In-place generation of complex matrix in	<b>row block</b> fashion, used with routines from Chapter ...	F01ZNF
In-place generation of real matrix in	<b>row block</b> fashion, used with routines from ...	F01ZMFP
... with symmetric sparsity pattern, distributed in	<b>row block</b> form	F11ZGFP
... with symmetric sparsity pattern, distributed in	<b>row block</b> form.	F11ZUFP
Computes number of	<b>rows</b> of a row block distributed matrix owned ...	Z01CFFP
Number of	<b>rows</b> or columns of matrix held locally on a ...	Z01CAFP
	<b>Safe</b> range of complex floating-point arithmetic	X02ANF
	<b>Safe</b> range of real floating-point arithmetic	X02AMF
	<b>Scatter</b> complex matrix from the root processor ...	F01WVFP
	<b>Scatter</b> complex matrix from the root processor ...	F01WUFP
	<b>Scatter</b> complex sparse matrix, stored in ...	F01XPFP
	<b>Scatter</b> complex vector distributed conformally ...	F01XTFP
	<b>Scatter</b> integer vector distributed conformally ...	F01XGFP
	<b>Scatter</b> real matrix from the root processor to ...	F01WPFP
	<b>Scatter</b> real matrix from the root processor to ...	F01WNFP
	<b>Scatter</b> real sparse matrix, stored in coordinate ...	F01XAFP
	<b>Scatter</b> real vector distributed conformally to ...	F01XEFP
Selects random number generator and initialises	<b>seeds</b> to give repeatable sequence	G05BBFP
(PDSTEBZ) All or	<b>selected</b> eigenvalues of real symmetric ...	F08JJFP
(PZSTEIN)	<b>Selected</b> eigenvectors of real symmetric ...	F08JXFP
(PDSTEIN)	<b>Selected</b> eigenvectors of real symmetric ...	F08JKFP
Largest permissible argument for	<b>sin</b> and <b>cos</b>	X02AHF
	<b>Singular</b> Value Decomposition (SVD) of complex ...	F02WRF
	<b>Singular</b> Value Decomposition (SVD) of real matrix, ...	F02WQFP
... finite interval, weight functions $\cos(\omega x)$ or	$\sin(\omega x)$	D01AXFP
	<b>Smallest</b> positive model number	X02AKF
Apply iterations of	<b>SOR</b> method to real sparse linear system, ...	F11DDFP
Apply iterations of	<b>SOR</b> method to the complex sparse linear ...	F11DRFP
... real sparse nonsymmetric linear system using Jacobi,	<b>SOR</b> or no preconditioned RGMRES, CGS or ...	F11DEFP
... sparse non-Hermitian linear system using Jacobi,	<b>SOR</b> or no preconditioned RGMRES, CGS or ...	F11DSFP
... of relaxed Jacobi iterative method to complex	<b>sparse</b> linear system, used mostly as Jacobi ...	F11DXFP
... of relaxed Jacobi iterative method to a real	<b>sparse</b> linear system, used mostly as Jacobi ...	F11DKFP
Apply iterations of SOR method to the complex	<b>sparse</b> linear system, used mostly as SOR ...	F11DRFP
Apply iterations of SOR method to real	<b>sparse</b> linear system, used mostly as SOR ...	F11DDFP
... of real dense vector distributed conformally to	<b>sparse</b> matrix	F01YFP
... system, used mostly as SOR preconditioner for real	<b>sparse</b> matrix	F11DDFP
... reverse-communication, preconditioner for real	<b>sparse</b> matrix	F11DGFP
... system, used mostly as Jacobi preconditioner for real	<b>sparse</b> matrix	F11DKFP
... <i>LU</i> factorization of local diagonal blocks of complex	<b>sparse</b> matrix	F11DTFP
Matrix-vector multiplication for real	<b>sparse</b> matrix	F11XBFP
Matrix-vector multiplication for complex	<b>sparse</b> matrix	F11XPFP
In-place generation of complex	<b>sparse</b> matrix according to cyclic row block ...	F01YQFP
In-place generation of complex	<b>sparse</b> matrix according to cyclic row block ...	F01YPFP
General set-up routine for real	<b>sparse</b> matrix distributed in cyclic row block form	F11ZAFP
General set-up routine for real	<b>sparse</b> matrix distributed in cyclic row block ...	F11ZBFP
General set-up routine for complex	<b>sparse</b> matrix, distributed in cyclic row block ...	F11ZPFP
... real dense vector, distributed conformally to a	<b>sparse</b> matrix on a logical grid of processors, ...	X04YAFP
... factorization of the local diagonal blocks of a real	<b>sparse</b> matrix, represented in coordinate ...	F11DAFP
... of linear equations, involving a real block diagonal	<b>sparse</b> matrix, represented in coordinate ...	F11DBFP
	Scatter real <b>sparse</b> matrix, stored in coordinate storage ...	F01XAFP
	Scatter complex <b>sparse</b> matrix, stored in coordinate storage ...	F01XPFP
Outputs complex vector, distributed conformally to	<b>sparse</b> matrix to a sequential file	X04YPFP
Scatter real vector distributed conformally to	<b>sparse</b> matrix, used with routines from Chapter F11	F01XEFP

- Gather real vector distributed conformally to **sparse** matrix, used with routines from Chapter F11 F01XFFP
- Scatter integer vector distributed conformally to **sparse** matrix, used with routines from Chapter F11 F01XGFP
- Gather integer vector distributed conformally to **sparse** matrix, used with routines from Chapter F11 F01XHFP
- Scatter complex vector distributed conformally to **sparse** matrix, used with routines from Chapter F11 F01XTFP
- Gather complex vector distributed conformally to **sparse** matrix, used with routines from Chapter F11 F01XUFP
- ... of complex dense vector distributed conformally to **sparse** matrix, used with routines from Chapter F11 F01YTFP
- In-place generation of real **sparse** matrix using cyclic row block distribution F01YAFP
- In-place generation of real **sparse** matrix using cyclic row block ... F01YBFP
- Permutation of non-zero entries of real **sparse** matrix with repeated sparsity pattern F11YAFP
- Permutation of non-zero entries of complex **sparse** matrix with repeated sparsity pattern F11YNFP
- Generates multi-colour ordering for real **sparse** matrix with symmetric sparsity pattern, ... F11ZGFP
- Generates multi-colour ordering for complex **sparse** matrix with symmetric sparsity pattern, ... F11ZUFP
- Complex **sparse** non-Hermitian linear system, ... F11DUFP
- Complex **sparse** non-Hermitian linear system, ... F11BTFP
- Complex **sparse** non-Hermitian linear system, ... F11BRFP
- Complex **sparse** non-Hermitian linear system, ... F11BSFP
- Solution of complex **sparse** non-Hermitian linear system using ... F11DVFP
- Solution of complex **sparse** non-Hermitian linear system using Jacobi, ... F11DSFP
- Real **sparse** nonsymmetric linear system, ... F11BCFP
- Real **sparse** nonsymmetric linear system, ... F11DFFP
- Real **sparse** nonsymmetric linear system, ... F11DGF
- Real **sparse** nonsymmetric linear system, ... F11BAFP
- Real **sparse** nonsymmetric linear system, ... F11BBFP
- Solution of real **sparse** nonsymmetric linear system using ... F11DHFP
- Solution of real **sparse** nonsymmetric linear system using Jacobi, ... F11DEFP
- Real **sparse** symmetric linear system, ... F11GCFP
- Real **sparse** symmetric linear system, ... F11GAFP
- Real **sparse** symmetric linear system, ... F11GBFP
- Solution of **sparse** symmetric linear system using ... F11JHFP
- Solution of real **sparse** symmetric linear system using Jacobi, ... F11JFP
- Black Box routine for **sparse** system of linear equations F11DCF
- ... -colour ordering for real sparse matrix with symmetric **sparsity** pattern, distributed in row block form F11ZGFP
- ... ordering for complex sparse matrix with symmetric **sparsity** pattern, distributed in row block form. F11ZUFP
- Unconstrained minimum of a sum of **squares**, Gauss-Newton algorithm using function ... E04DFP
- ... of real sparse symmetric linear system using Jacobi, **SSOR** or no preconditioned CG or **SYMMLQ** (Black Box) F11JFP
- Scatter real sparse matrix, stored in coordinate **storage** format, using cyclic row block ... F01XAFP
- Scatter complex sparse matrix, stored in coordinate **storage** format, using cyclic row block ... F01XPFP
- Unconstrained minimum of a **sum** of squares, Gauss-Newton algorithm ... E04DFP
- Singular Value Decomposition (**SVD**) of complex matrix, one-sided Jacobi method F02WRFP
- Singular Value Decomposition (**SVD**) of real matrix, one-sided Jacobi method F02WQFP
- Solution of real **symmetric** banded linear system (Black Box) F04HFP
- (PDPBTRS) Solution of real **symmetric** banded linear system, matrix already ... F07HEFP
- In-place generation of real **symmetric** banded matrix in column block fashion, ... F01YXFP
- (PDPBTRF) Cholesky factorization of real **symmetric** banded matrix with no pivoting F07HDFP
- Real sparse **symmetric** linear system, reverse-communication, ... F11GCFP
- Real sparse **symmetric** linear system, reverse-communication, ... F11GAFP
- Real sparse **symmetric** linear system, reverse-communication, ... F11GBFP
- Solution of sparse **symmetric** linear system using block-Jacobi ... F11JHFP
- Solution of real sparse **symmetric** linear system using Jacobi, **SSOR** or no ... F11JFP
- Eigenvalues and eigenvectors of real **symmetric** matrix, one-sided Jacobi method F02FQFP
- (PDSYTRD) Orthogonal reduction of real **symmetric** matrix to tridiagonal form F08FEFP
- Solution of real **symmetric** positive-definite linear system (Black ... F04FBFP
- (PDPOTRS) Solution of real **symmetric** positive-definite linear system, matrix ... F07FEFP
- (PDPOTRF) Cholesky factorization of real **symmetric** positive-definite matrix F07DFP
- ... multi-colour ordering for real sparse matrix with **symmetric** sparsity pattern, distributed in row ... F11ZGFP
- ... multi-colour ordering for complex sparse matrix with **symmetric** sparsity pattern, distributed in row ... F11ZUFP
- ... Unitary reduction of complex Hermitian matrix to **symmetric** tridiagonal form F08FSFP
- real
- Solution of real **symmetric** tridiagonal linear system (Black Box) F04JBFP
- (PDPTTRS) Solution of real **symmetric** tridiagonal linear system, matrix ... F07JFP
- (PZPTTRS) Solution of real **symmetric** tridiagonal linear system, matrix ... F07JSFP
- (PDSTEBZ) All or selected eigenvalues of real **symmetric** tridiagonal matrix by bisection F08JJFP
- (PZSTEIN) Selected eigenvectors of real **symmetric** tridiagonal matrix by inverse iteration, ... F08JXFP
- (PDSTEIN) Selected eigenvectors of real **symmetric** tridiagonal matrix by inverse iteration, ... F08JKFP
- (PDPTTRF) Cholesky factorization of real **symmetric** tridiagonal matrix with no-pivoting F07JDFP
- ... solver using preconditioned CG or **SYMMLQ** F11GBFP
- ... system using Jacobi, **SSOR** or no preconditioned CG **SYMMLQ** (Black Box) F11JFP
- or
- ... system using block-Jacobi preconditioned CG or **SYMMLQ** (Black Box) F11JHFP
- Solution of real symmetric tridiagonal linear **system** (Black Box) F04JBFP
- Black Box routine for sparse **system** of linear equations F11DCF
- Solution of real **system** of linear equations, involving a real ... F11DBFP
- Generates an  $l$  by  $m$  by  $n$  **three-dimensional** array  $A(i, j, k)$  on a grid of ... F01ZHFP
- Direct or inverse **three-dimensional** discrete Fourier transform of a ... C06MXFP
- Topology** to be used by **BLACS** for broadcasting and ... Z01BEFP
- Direct or inverse two-dimensional Fourier **transform** of a complex sequence C06FUF
- Direct or inverse one-dimensional discrete Fourier **transform** of a complex sequence C06MCF
- Direct or inverse three-dimensional discrete Fourier **transform** of a complex sequence C06MXFP
- (PDORMQR) Apply the orthogonal **transformation** determined by F08AEFP (PDORMQR) F08AGFP
- (PZUNMQR) Apply the unitary **transformation** determined by F08ASFP (PZUNMQR) F08AUF
- (PDORMTR) Apply orthogonal **transformation** determined by F08FEFP (PDSYTRD) F08FGFP
- (PZUNMTR) Apply unitary **transformation** matrix determined by F08FSFP ... F08FUF
- (PDTRCON) Estimates condition number of real **triangular** matrix F07TGFP
- ... Orthogonal reduction of real symmetric matrix to **tridiagonal** form F08FEFP
- ... of complex Hermitian matrix to real symmetric **tridiagonal** form F08FSFP
- Solution of real symmetric **tridiagonal** linear system (Black Box) F04JBFP
- Solution of complex Hermitian **tridiagonal** linear system (Black Box) F04JZFP
- (PDPTTRS) Solution of real symmetric **tridiagonal** linear system, matrix already factorized ... F07JFP

(PZPTTRS) Solution of real symmetric <b>tridiagonal</b> linear system, matrix already factorized ...	F07JSFP
... All or selected eigenvalues of real symmetric <b>tridiagonal</b> matrix by bisection	F08JJFP
(PZSTEIN) Selected eigenvectors of real symmetric <b>tridiagonal</b> matrix by inverse iteration, storing ...	F08JXFP
(PDSTEIN) Selected eigenvectors of real symmetric <b>tridiagonal</b> matrix by inverse iteration, storing ...	F08JKFP
(PDPTRF) Cholesky factorization of real symmetric <b>tridiagonal</b> matrix with no-pivoting	F07JDFP
(PZPTRF) Factorization of complex Hermitian <b>tridiagonal</b> matrix with no-pivoting	F07JRFPP
Direct or inverse <b>two-dimensional</b> Fourier transform of a complex ...	C06FUFPP
Identifies logical processors in context in the <b>two-dimensional</b> grid declared by Z01AAFP	Z01BBFP
Defines <b>two-dimensional</b> logical processor grid (Library Grid) ...	Z01AAFP
Outputs set of real general matrices distributed on a <b>two-dimensional</b> logical processor grid, used with ...	X04BFFFP
... set of complex general matrices distributed on a <b>two-dimensional</b> logical processor grid, used with ...	X04BUFP
<b>Two-dimensional</b> quadrature, finite region	D01DAFP
Minimum of a general nonlinear function with <b>unconstrained</b> , Gauss–Newton algorithm using function ...	E04JBFP
<b>Unconstrained</b> minimum of a sum of squares, ...	E04DFFP
... real number from the interval $[a,b]$ , <b>uniform</b> distribution	G05ACFP
... pseudo-random integer from the interval $[ia,ib]$ , <b>uniform</b> distribution	G05AZFP
Pseudo-random real numbers from the interval $(0,0)$ , <b>uniform</b> distribution	G05BAFP
... real numbers from the interval $(a,b)$ , <b>uniform</b> distribution	G05BCFP
Pseudo-random integers from the interval $(ia,ib)$ , <b>uniform</b> distribution	G05BZFP
(PZUNGQR) Form all or part of a <b>unitary</b> $Q$ from $QR$ factorization determined ...	F08ATFP
(PZHETRD) <b>Unitary</b> reduction of complex Hermitian matrix to ...	F08FSFP
(PZUNMQR) Apply the <b>unitary</b> transformation determined by F08ASFP ...	F08AUFPP
(PZUNMTR) Apply <b>unitary</b> transformation matrix determined by ...	F08FUFPP
Outputs real dense <b>vector</b> , distributed conformally to a sparse ...	X04YAFP
Gather real <b>vector</b> distributed conformally to matrix, used ...	F01ZPFP
In-place generation of real dense <b>vector</b> distributed conformally to sparse matrix	F01YEFPP
Outputs complex <b>vector</b> , distributed conformally to sparse ...	X04YPFP
Scatter real <b>vector</b> distributed conformally to sparse matrix, ...	F01XEFP
Gather real <b>vector</b> distributed conformally to sparse matrix, ...	F01XFFP
Scatter integer <b>vector</b> distributed conformally to sparse matrix, ...	F01XGFP
Gather integer <b>vector</b> distributed conformally to sparse matrix, ...	F01XHFP
Scatter complex <b>vector</b> distributed conformally to sparse matrix, ...	F01XTFP
Gather complex <b>vector</b> distributed conformally to sparse matrix, ...	F01XUFP
In-place generation of complex dense <b>vector</b> distributed conformally to sparse matrix, ...	F01YTFP
Permutation of real <b>vector</b> from distribution based order to local ...	F11YBFP
Permutation of complex <b>vector</b> from distribution based order to local ...	F11YPFP
Permutation of real <b>vector</b> from local indexing based order to ...	F11YCFP
Permutation of complex <b>vector</b> from local indexing based order to ...	F11YQFP
In-place generation of complex <b>vector</b> in column block fashion, used with ...	F01ZYFP
In-place generation of real <b>vector</b> in column block fashion, used with ...	F01ZZFP
One-dimensional quadrature, adaptive, finite interval, <b>weight</b> functions $\cos(\omega x)$ or ...	D01AXFP