NAG Fortran Library Chapter Contents

F04 – Simultaneous Linear Equations

Note: please refer to the Users' Note for your implementation to check that a routine is available.

F04 Chapter Introduction

Routine Name	Mark of Introduction	Purpose
F04AAF**	2	Solution of real simultaneous linear equations with multiple right-hand sides (Black Box)
F04ABF	2	Solution of real symmetric positive-definite simultaneous linear equations with multiple right-hand sides using iterative refinement (Black Box)
F04ACF**	2	Solution of real symmetric positive-definite banded simultaneous linear equations with multiple right-hand sides (Black Box)
F04ADF**	2	Solution of complex simultaneous linear equations with multiple right-hand sides (Black Box)
F04AEF	2	Solution of real simultaneous linear equations with multiple right-hand sides using iterative refinement (Black Box)
F04AFF	2	Solution of real symmetric positive-definite simultaneous linear equations using iterative refinement (coefficient matrix already factorized by F03AEF)
F04AGF	2	Solution of real symmetric positive-definite simultaneous linear equations (coefficient matrix already factorized by F03AEF)
F04AHF	2	Solution of real simultaneous linear equations using iterative refinement (coefficient matrix already factorized by F03AFF)
F04AJF	2	Solution of real simultaneous linear equations (coefficient matrix already factorized by F03AFF)
F04AMF	2	Least-squares solution of m real equations in n unknowns, rank $= n$, $m \geq n$ using iterative refinement (Black Box)
F04ARF**	4	Solution of real simultaneous linear equations, one right-hand side (Black Box)
F04ASF	4	Solution of real symmetric positive-definite simultaneous linear equations, one right-hand side using iterative refinement (Black Box)
F04ATF	4	Solution of real simultaneous linear equations, one right-hand side using iterative refinement (Black Box)
F04AXF	7	Solution of real sparse simultaneous linear equations (coefficient matrix already factorized)
F04BAF	21	Computes the solution and error-bound to a real system of linear equations
F04BBF	21	Computes the solution and error-bound to a real banded system of linear equations
F04BCF	21	Computes the solution and error-bound to a real tridiagonal system of linear equations
F04BDF	21	Computes the solution and error-bound to a real symmetric positive-definite system of linear equations
F04BEF	21	Computes the solution and error-bound to a real symmetric positive-definite system of linear equations, packed storage
F04BFF	21	Computes the solution and error-bound to a real symmetric positive-definite banded system of linear equations
F04BGF	21	Computes the solution and error-bound to a real symmetric positive-definite tridiagonal system of linear equations
F04BHF	21	Computes the solution and error-bound to a real symmetric system of linear equations
F04BJF	21	Computes the solution and error-bound to a real symmetric system of linear equations, packed storage

F04CAF	21	Computes the solution and error-bound to a complex system of linear equations
F04CBF	21	Computes the solution and error-bound to a complex banded system of linear equations
F04CCF	21	Computes the solution and error-bound to a complex tridiagonal system of linear equations
F04CDF	21	Computes the solution and error-bound to a complex Hermitian positive-definite system of linear equations
F04CEF	21	Computes the solution and error-bound to a complex Hermitian positive-definite system of linear equations, packed storage
F04CFF	21	Computes the solution and error-bound to a complex Hermitian positive-definite banded system of linear equations
F04CGF	21	Computes the solution and error-bound to a complex Hermitian positive-definite tridiagonal system of linear equations
F04CHF	21	Computes the solution and error-bound to a complex Hermitian system of linear equations
F04CJF	21	Computes the solution and error-bound to a complex Hermitian system of linear equations, packed storage
F04DHF	21	Computes the solution and error-bound to a complex symmetric system of linear equations
F04DJF	21	Computes the solution and error-bound to a complex symmetric system of linear equations, packed storage.
F04EAF**	11	Solution of real tridiagonal simultaneous linear equations, one right-hand side (Black Box)
F04FAF**	11	Solution of real symmetric positive-definite tridiagonal simultaneous linear equations, one right-hand side (Black Box)
F04FEF	15	Solution of the Yule–Walker equations for real symmetric positive-definite Toeplitz matrix, one right-hand side
F04FFF	15	Solution of real symmetric positive-definite Toeplitz system, one right-hand side
F04JAF**	8	Minimal least-squares solution of m real equations in n unknowns, rank $\leq n$, $m \geq n$
F04JDF**	8	Minimal least-squares solution of m real equations in n unknowns, rank $\leq m$, $m \leq n$
F04JGF	8	Least-squares (if rank $= n$) or minimal least-squares (if rank $< n$) solution of m real equations in n unknowns, rank $\leq n$, $m \geq n$
F04JLF**	17	Real general Gauss–Markov linear model (including weighted least-squares)
F04JMF**	17	Equality-constrained real linear least-squares problem
F04KLF**	17	Complex general Gauss–Markov linear model (including weighted least-squares)
F04KMF**	17	Equality-constrained complex linear least-squares problem
F04LEF	11	Solution of real tridiagonal simultaneous linear equations (coefficient matrix already factorized by F01LEF)
F04LHF	13	Solution of real almost block diagonal simultaneous linear equations (coefficient matrix already factorized by F01LHF)
F04MCF	8	Solution of real symmetric positive-definite variable-bandwidth simultaneous linear equations (coefficient matrix already factorized by F01MCF)
F04MEF	15	Update solution of the Yule–Walker equations for real symmetric positive-definite Toeplitz matrix
F04MFF	15	Update solution of real symmetric positive-definite Toeplitz system
F04QAF	11	Sparse linear least-squares problem, m real equations in n unknowns
F04YAF	11	Covariance matrix for linear least-squares problems, m real equations in n unknowns
F04YCF	13	Norm estimation (for use in condition estimation), real matrix
F04ZCF	13	Norm estimation (for use in condition estimation), complex matrix

** This routine has been superseded, although it will be retained in the Library until at least Mark 23. See the document 'Advice on Replacement Calls for Withdrawn/Superseded Routines' for details of the recomended replacement routine.