

NAG Fortran Library Routine Document

F06UPF

Note: before using this routine, please read the Users' Note for your implementation to check the interpretation of *bold italicised* terms and other implementation-dependent details.

1 Purpose

F06UPF returns, via the function name, the value of the 1-norm, the ∞ -norm, the Frobenius norm, or the maximum absolute value of the elements of a complex n by n Hermitian tridiagonal matrix A .

2 Specification

double precision FUNCTION F06UPF (NORM, N, D, E)

INTEGER	N
<i>double precision</i>	D(*)
<i>complex*16</i>	E(*)
CHARACTER*1	NORM

3 Description

None.

4 References

None.

5 Parameters

- | | | |
|----|--|--------------|
| 1: | NORM – CHARACTER*1 | <i>Input</i> |
| | <i>On entry:</i> specifies the value to be returned:
if NORM = '1' or 'O', the 1-norm;
if NORM = 'I', the ∞ -norm;
if NORM = 'F' or 'E', the Frobenius (or Euclidean) norm;
if NORM = 'M', the value $\max_{i,j} a_{ij} $ (not a norm).
<i>Constraint:</i> NORM = '1', 'O', 'I', 'F', 'E' or 'M'. | |
| 2: | N – INTEGER | <i>Input</i> |
| | <i>On entry:</i> n , the order of the matrix A .
<i>Constraint:</i> $N \geq 0$. | |
| 3: | D(*) – <i>double precision</i> array | <i>Input</i> |
| | Note: the dimension of the array D must be at least $\max(1, N)$.
<i>On entry:</i> the n diagonal elements of the tridiagonal matrix A . | |
| 4: | E(*) – <i>complex*16</i> array | <i>Input</i> |
| | Note: the dimension of the array E must be at least $\max(1, N - 1)$.
<i>On entry:</i> the $(n - 1)$ sub-diagonal or super-diagonal elements of the tridiagonal matrix A . | |

6 Error Indicators and Warnings

None.
