NAG Fortran Library Routine Document

F06RNF

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

F06RNF 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 real n by n tridiagonal matrix A.

2 Specification

double precision `FUNCTION F06RNF (NORM, N, DL, D, DU)`

```
INTEGER                          N
double precision                 DL(*), D(*), DU(*)
CHARACTER*1                      NORM
```

3 Description

None.

4 References

None.

5 Parameters

1: NORM – CHARACTER*1 *Input*

On entry: 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 $\max_{i,j}\left|a_{ij}\right|$ (not a norm).

Constraint: NORM $=$ '1', 'O', 'I', 'F', 'E' or 'M'.

2: N – INTEGER *Input*

On entry: n, the order of the matrix A.

Constraint: N ≥ 0.

3: DL$(*)$ – ***double precision*** array *Input*

Note: the dimension of the array DL must be at least $\max(1, \mathrm{N}-1)$.

On entry: the $(n-1)$ sub-diagonal elements of A.

4: D$(*)$ – ***double precision*** array *Input*

Note: the dimension of the array D must be at least $\max(1, \mathrm{N})$.

On entry: the n diagonal elements of A.

5: DU$(*)$ – ***double precision*** array *Input*

Note: the dimension of the array DU must be at least $\max(1, \mathrm{N}-1)$.

On entry: the $(n-1)$ super-diagonal elements of A.

6 Error Indicators and Warnings

None.