

NAG Library Routine Document

F06KLF

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

F06KLF determines the index of the first negligible element of a real vector.

2 Specification

```
INTEGER FUNCTION F06KLF(N, X, INCX, TOL)
INTEGER                                N, INCX
double precision                     X(*), TOL
```

3 Description

F06KLF finds the first element of the n element real vector x for which

$$|x_{k+1}| \leq tol \max(|x_1|, \dots, |x_k|)$$

and returns the index k via the function name. If no such k exists, then the value n is returned. If a negative value of tol is supplied, the value of ***machine precision*** is used in place of tol .

4 References

None.

5 Parameters

- | | | |
|----|--|--------------|
| 1: | N – INTEGER | <i>Input</i> |
| | <i>On entry:</i> n , the number of elements in x . | |
| 2: | X(*) – <i>double precision</i> array | <i>Input</i> |
| | Note: the dimension of the array X must be at least $1 + (N - 1) INCX $. | |
| | <i>On entry:</i> the incremented array X must contain the n element vector x . | |
| 3: | INCX – INTEGER | <i>Input</i> |
| | <i>On entry:</i> the increment in the subscripts of X between successive elements of x . | |
| | <i>Constraint:</i> $INCX > 0$. | |
| 4: | TOL – <i>double precision</i> | <i>Input</i> |
| | <i>On entry:</i> the value tol . | |

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.
