

# NAG Fortran 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 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  $tol$ .

### 2 Specification

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

### 3 Description

None.

### 4 References

None.

### 5 Parameters

- |    |                                                                                            |              |
|----|--------------------------------------------------------------------------------------------|--------------|
| 1: | N – INTEGER                                                                                | <i>Input</i> |
|    | <i>On entry:</i> $n$ , the number of elements in $x$ .                                     |              |
| 2: | X(*) – <b><i>double precision</i></b> array                                                | <i>Input</i> |
|    | <i>On entry:</i> the 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 – <b><i>double precision</i></b>                                                       | <i>Input</i> |
|    | <i>On entry:</i> the value $tol$ .                                                         |              |

### 6 Error Indicators and Warnings

None.