

# NAG Library Routine Document

## F06EFF (DCOPY)

**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

F06EFF (DCOPY) makes a copy of a real vector.

### 2 Specification

```
SUBROUTINE F06EFF (N, X, INCX, Y, INCY)
  INTEGER          N, INCX, INCY
  REAL (KIND=nag_wp) X(*), Y(*)
```

The routine may be called by its BLAS name *dcopy*.

### 3 Description

F06EFF (DCOPY) performs the operation

$$y \leftarrow x$$

where  $x$  and  $y$  are  $n$ -element real vectors scattered with stride INCX and INCY respectively.

### 4 References

Lawson C L, Hanson R J, Kincaid D R and Krogh F T (1979) Basic linear algebra subprograms for Fortran usage *ACM Trans. Math. Software* **5** 308–325

### 5 Arguments

- |    |   |               |
|----|---|---------------|
| 1: | N – INTEGER   | <i>Input</i>  |
|    | <i>On entry:</i> $n$ , the number of elements in $x$ and $y$ .  |               |
| 2: | X(*) – REAL (KIND=nag_wp) array   | <i>Input</i>  |
|    | <b>Note:</b> the dimension of the array X must be at least $\max(1, 1 + (N - 1) \times  \text{INCX} )$ .        |               |
|    | <i>On entry:</i> the $n$ -element vector $x$ .  |               |
|    | If $\text{INCX} > 0$ , $x_i$ must be stored in $X(1 + (i - 1) \times \text{INCX})$ , for $i = 1, 2, \dots, N$ . |               |
|    | If $\text{INCX} < 0$ , $x_i$ must be stored in $X(1 - (N - i) \times \text{INCX})$ , for $i = 1, 2, \dots, N$ . |               |
|    | Intermediate elements of X are not referenced.  |               |
| 3: | INCX – INTEGER  | <i>Input</i>  |
|    | <i>On entry:</i> the increment in the subscripts of X between successive elements of $x$ .                      |               |
| 4: | Y(*) – REAL (KIND=nag_wp) array   | <i>Output</i> |
|    | <b>Note:</b> the dimension of the array Y must be at least $\max(1, 1 + (N - 1) \times  \text{INCY} )$ .        |               |
|    | <i>On exit:</i> the vector $y$ .  |               |
|    | If $\text{INCY} > 0$ , $y_i$ will be stored in $Y(1 + (i - 1) \times \text{INCY})$ , for $i = 1, 2, \dots, N$ . |               |
|    | If $\text{INCY} < 0$ , $y_i$ will be stored in $Y(1 - (N - i) \times \text{INCY})$ , for $i = 1, 2, \dots, N$ . |               |

Intermediate elements of Y are unchanged.

5: INCY – INTEGER

*Input*

*On entry:* the increment in the subscripts of Y between successive elements of  $y$ .

## 6 Error Indicators and Warnings

None.

## 7 Accuracy

Not applicable.

## 8 Parallelism and Performance

F06EFF (DCOPY) is not threaded in any implementation.

## 9 Further Comments

None.

## 10 Example

None.

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