

NAG Library Routine Document

F06HMF (ZROT)

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

F06HMF (ZROT) applies a plane rotation, where the cosine is real and the sine is complex, to two n -element complex vectors x and y :

$$\begin{pmatrix} x^T \\ y^T \end{pmatrix} \leftarrow \begin{pmatrix} c & s \\ -\bar{s} & c \end{pmatrix} \begin{pmatrix} x^T \\ y^T \end{pmatrix}.$$

2 Specification

SUBROUTINE F06HMF(N, CX, INCX, CY, INCY, C, S)

INTEGER N, INCX, INCY

double precision C

complex*16 CX(*), CY(*), S

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

3 Description

None.

4 References

None.

5 Parameters

- 1: N – INTEGER *Input*
On entry: n , the number of elements in x and y .
- 2: CX(*) – ***complex*16*** array *Input/Output*
Note: the dimension of the array CX must be at least $\max(1, 1 + (N - 1)|\text{INCX}|)$.
On entry: the original vector x .
On exit: the transformed vector x .
- 3: INCX – INTEGER *Input*
On entry: the increment in the subscripts of CX between successive elements of x .
- 4: CY(*) – ***complex*16*** array *Input/Output*
Note: the dimension of the array CY must be at least $\max(1, 1 + (N - 1)|\text{INCY}|)$.
On entry: the original vector y .
On exit: the transformed vector y .
- 5: INCY – INTEGER *Input*
On entry: the increment in the subscripts of CY between successive elements of y .

- 6: C – *double precision* *Input*
 On entry: the value c , the cosine of the rotation.
- 7: S – *complex*16* *Input*
 On entry: the value s , the sine of the rotation.

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.
