NAG Fortran Library Routine Document

F06EXF (DROTI)

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

F06EXF (DROTI) applies a real plane rotation to a sparse real vector x stored in compressed form and a real vector y in full storage form:

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

The plane rotation has the form generated by F06AAF (DROTG) or F06BAF.

2 Specification

```
SUBROUTINE F06EXF (NZ, X, INDX, Y, C, S)
INTEGER             NZ, INDX(*)
double precision    X(*), Y(*), C, S
```

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

3 Description

None.

4 References

None.

5 Parameters

1: NZ – INTEGER *Input*

On entry: the number of elements in the compressed vector x.

2: X($*$) – ***double precision*** array *Input/Output*

On entry: the compressed vector x.

On exit: the transformed vector x.

3: INDX($*$) – INTEGER array *Input*

On entry: the indices of the elements in the compressed vector x.

Constraint: The indices must be distinct.

4: Y($*$) – ***double precision*** array *Input/Output*

On entry: the vector y.

On exit: the transformed vector y. Only elements corresponding to indices in INDX are altered.

5: C – ***double precision*** *Input*

On entry: the value c, the cosine of the rotation.

6: S – ***double precision*** *Input*

On entry: the value s, the sine of the rotation.

6 Error Indicators and Warnings

None.