

NAG Library Routine Document

F06GTF (ZAXPYI)

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

F06GTF (ZAXPYI) adds a scaled sparse complex vector to an unscaled complex vector.

2 Specification

```
SUBROUTINE F06GTF(NZ, A, X, INDX, Y)
  INTEGER          NZ, INDX(*)
  complex*16      A, X(*), Y(*)
```

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

3 Description

F06GTF (ZAXPYI) performs the operation

$$y \leftarrow \alpha x + y$$

where x is a sparse complex vector stored in compressed form, and y is a complex vector in full storage form.

4 References

None.

5 Parameters

- | | | |
|----|--|---------------------|
| 1: | NZ – INTEGER | <i>Input</i> |
| | <i>On entry:</i> the number of elements in the compressed vector x . | |
| 2: | A – complex*16 | <i>Input</i> |
| | <i>On entry:</i> the scalar α . | |
| 3: | X(*) – complex*16 array | <i>Input</i> |
| | Note: the dimension of the array X must be at least $\max(1, \text{NZ})$. | |
| | <i>On entry:</i> the compressed vector x . | |
| 4: | INDX(*) – INTEGER array | <i>Input</i> |
| | Note: the dimension of the array INDX must be at least $\max(1, \text{NZ})$. | |
| | <i>On entry:</i> the indices of the elements in the compressed vector x . | |
| | <i>Constraint:</i> the indices must be distinct. | |
| 5: | Y(*) – complex*16 array | <i>Input/Output</i> |
| | Note: the dimension of the array Y must be at least $\max_k(\text{INDX}(k))$. | |
| | <i>On entry:</i> the vector y . Only elements corresponding to indices in INDX are accessed. | |

On exit: the updated vector y .

6 Error Indicators and Warnings

None.

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

None.
