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Language : Fortran

Library: KERNLIB
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Revised:

Rotating a 3-Vector

Subroutine subprogram ROT rotates a 3-vector (a_1, a_2, a_3) by a given angle θ around the $z-$axis.

Structure:

SUBROUTINE subprogram
User Entry Names: ROT
COMMON Block Names and Lengths: /SLATE/ 40

Usage:

```
CALL ROT(A,TH,B)
```

A (REAL) One-dimensional array of length 3, containing (a_1, a_2, a_3).

TH (REAL) Angle θ given in radians.

B (REAL) One-dimensional array of length 3. On exit, B contains the components (b_1, b_2, b_3) of the rotated vector, i.e.

$b_1 = a_1 \cos\theta - a_2 \sin\theta$

$b_2 = a_1 \sin\theta + a_2 \cos\theta$

$b_3 = a_3$.

B may overlap A.

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