

## ADAS Subroutine d5diag

```
      SUBROUTINE D5DIAG( NDSTAT , NDMET ,  
      &                   NSTATE , NMET ,  
      &                   CFREC   , CFION , CFMET  
      &                   )
```

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C \*\*\*\*\* FORTRAN77 SUBROUTINE : D5DIAG \*\*\*\*\*

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C PURPOSE: CALCULATION OF PRIME DIAGONAL OF METASTABLE RATE COEFFICIENT  
C MATRIX

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C CALLING PROGRAM: D5MPOP

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C INPUT: (R\*8) CFREC ( , , ) = RECOMBINATION RATE COEFFICIENTS TO ALL  
C METASTABLE NDMET; STARTING FROM FIRST TO  
C GROUND LEVEL WITH CFREC(1, NDMET, NDMET)  
C SET TO ZERO  
C DIMENSIONS = (NSTATE, NDMET, NDMET)

C

C INPUT: (R\*8) CFION ( , , ) = IONISATION RATE COEFFICIENTS TO ALL  
C METASTABLE NDMET; STARTING FROM GROUND  
C TO FIRST LEVEL, WITH  
C CFION(NSTATE, NDMET, NDMET) SET TO ZERO  
C DIMENSIONS = (NSTATE, NDMET, NDMET)

C INPUT: (I\*4) NDSTAT

= MAXIMUM NUMBER OF NDMET

C INPUT: (I\*4) NSTATE

= PARAMETER = NO OF NDMET

C INPUT: (I\*4) NDMET

= PARAMETER = MAXIMUM SIZE OF MATRICES  
HOLDING METASTABLE TRANSITIONS

C INPUT (I\*4) NMET ( )

= NO OF METASTABLES IN EACH ENERGY LEVEL  
DETERMINES ACTUAL SIZE OF MINI MATRICES  
DIMENSION = NSTATE

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C OUTPUT: (R\*8) CFMET ( , , ) = CROSS COUPLING COEFFICIENTS BETWEEN  
C METASTABLE NDMET WITH LEADING DIAGONAL  
C CALCULATED  
C DIMENSIONS = (NSTATE, NDMET, NDMET)

C

C ROUTINES : NONE

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C UNIX-IDL PORT:

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C VERSION: 1.1

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- FIRST RELEASE

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INTEGER	NDMET,	NDSTAT,	NMET (NDSTAT)
INTEGER	NSTATE		
REAL*8	CFION (NDMET, NDMET, NDSTAT)		
REAL*8	CFMET (NDMET, NDMET, NDSTAT)		
REAL*8	CFREC (NDMET, NDMET, NDSTAT)		