

ADAS Subroutine bxstkb

```
      SUBROUTINE BXSTKB( NDTEM , NDLEV ,  
&                      IT      , NORD   ,  
&                      IORDR  ,  
&                      CMAT   , VEC    ,  
&                      STV  
&                      )
```

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C  
C ***** FORTRAN77 SUBROUTINE: BXSTKA *****  
C  
C PURPOSE: TO STACK UP IN 'STV' THE RECOMBINATION CONTRIBUTION FOR  
C EACH NON-METASTABLE/ORDINARY EXCITED LEVEL FOR A GIVEN  
C TEMPERATURE AND DENSITY.  
C  
C CALLING PROGRAM: ADAS205/ADAS206  
C  
C SUBROUTINE:  
C  
C INPUT : (I*4) NDTEM = MAXIMUM NUMBER OF TEMPERATURES ALLOWED  
C INPUT : (I*4) NDLEV = MAXIMUM NUMBER OF ENERGY LEVELS ALLOWED  
C  
C INPUT : (I*4) IT = INDEX DENOTING THE TEMPERATURE  
C INPUT : (I*4) NORD = NUMBER OF ORDINARY EXCITED LEVELS  
C  
C INPUT : (I*4) IORDR() =INDEX OF ORDINARY EXCITED LEVELS IN COMPLETE  
C LEVEL LIST.  
C (ARRAY SIZE = 'NDLEV' )  
C  
C INPUT : (R*8) CMAT(,) = INVERTED RATE MATRIX COVERING ALL  
C NON-METASTABLE/ORDINARY EXCITED LEVELS  
C TRANSITIONS.  
C (UNITS: SEC)  
C VALUES FOR GIVEN TEMPERATURE AND DENSITY.  
C 1st DIMENSION: ORDINARY EXCITED LEVEL INDEX  
C 2nd DIMENSION: ORDINARY EXCITED LEVEL INDEX  
C  
C INPUT : (R*8) VEC(,) = RECOMBINATION RATE COEFFT. VALUES.  
C (UNITS: CM**3/SEC-1)  
C VALUES FOR GIVEN TEMPERATURE AND DENSITY.  
C 1st DIMENSION: TEMPERATURE INDEX ('IT')  
C 2nd DIMENSION: CAPTURING LEVEL INDEX  
C  
C OUTPUT: (R*8) STV() = RECOMBINATION CONTRIBUTION FOR EACH  
C NON-METASTABLE/ORDINARY EXCITED LEVELS.  
C (UNITS: CM**3)  
C VALUES FOR GIVEN TEMPERATURE AND DENSITY.  
C DIMENSION: ORDINARY EXCITED LEVEL INDEX  
C  
C (I*4) IS1 = ORDINARY EXCITED LEVEL INDEX  
C (I*4) IS2 = ORDINARY EXCITED LEVEL INDEX  
C  
C (R*8) COEF = VARIABLE USED TO SUM COEFFICIENT VALUES
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C
C
C ROUTINES: NONE
C
C NOTE:
C IF: n = number of ordinary/non-metastable levels
C R(nxn) = Rate matrix (SEC-1) covering transistions between
C all possible pairs of ordinary levels.
C row : final level
C column: initial level
C (Inverse R-1(nxn) = 'CMAT(,)')
C V(n) = Recombination rate vector (CM**3 SEC-1) covering
C all ordinary levels.
C (= 'VEC()' - ordinary level part).
C S(n) = Recombination contribution vector (CM**3) covering
C all ordinary levels (= 'STV()').

C Therefore: R(nxn).S(n) = V(n)

C => S(n) = R-1(nxn).V(n)

C
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C JET EXT. 4569
C

C DATE: 09/10/90
C

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C

INTEGER	IORDR (NDLEV) ,	IT,	NDLEV
INTEGER	NDTEM, NORD		
REAL*8	CMAT (NDLEV, NDLEV) ,	STV (NDLEV)	
REAL*8	VEC (NDTEM, NDLEV)		