ADAS Subroutine b8stvm

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C
      SUBROUTINE B8STVM( NDMET  ,
     &                   NMET   ,
     &                   CRMAT  ,
     &                   IP     ,
     &                   VRED   ,
     &                   STVM
     &                 )
C-----------------------------------------------------------------------
C
C  ****************** FORTRAN77 SUBROUTINE: B8STVM *********************
C
C  PURPOSE: TO  CALCULATE  AND STACK UP IN  'STVM'  THE METASTABLE LEVEL
C           RECOMBINATION  COEFFICIENTS  FOR  A  GIVEN  TEMPERATURE  AND
C           DENSITY.
C
C  CALLING PROGRAM:  ADAS205/ADAS206
C
C  SUBROUTINE:
C
C  INPUT :  (I*4)  NDMET   = MAXIMUM NUMBER OF METASTABLE LEVELS ALLOWED
C
C  INPUT :  (I*4)  NMET    = NUMBER OF METASTABLE LEVELS
C
C  INPUT :  (R*8)  CRMAT(,)= INVERTED  METASTABLE  LEVEL   RATE   MATRIX
C                            COVERING ALL TRANSITIONS BETWEEN METASTABLE
C                            LEVELS EXCEPT THOSE INVOLVING LEVEL 1.
C                            (UNITS: SEC)
C                            VALUES FOR GIVEN TEMPERATURE AND DENSITY.
C                            1st DIMENSION: METASTABLE LEVEL INDEX - 1
C                            2nd DIMENSION: METASTABLE LEVEL INDEX - 1
C           (I*4)  IP       = PARENT INDEX
C
C  INPUT :  (R*8)  VRED(,) = VECTOR  OF RECOMBINATION RATE CONTRIBUTIONS
C                            FOR EACH METASTABLE LEVEL.
C                            (UNITS: SEC-1)
C                            VALUES FOR GIVEN TEMPERATURE AND DENSITY.
C                            DIMENSION: METASTABLE LEVEL INDEX
C
C  OUTPUT:  (R*8)  STVM()  = RECOMBINATION  CONTRIBUTION  FOR  EACH
C                            METASTABLE LEVEL. (UNITS: CM**3)
C                            VALUES FOR GIVEN TEMPERATURE AND DENSITY.
C                            (LEVEL 1 IS TAKEN AS ZERO)
C                            DIMENSION: METASTABLE LEVEL INDEX
C
C           (I*4)  IM1      = METASTABLE LEVEL ARRAY INDEX
C           (I*4)  IM2      = METASTABLE LEVEL ARRAY INDEX
C
C
C ROUTINES: NONE
C
C NOTE:
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C           STVM(IM1)       SUM( (the transistion rate from IM2 to IM1)
C                                x (the recombination rate contribution
C                                   for metastable level IM2) )
C
C                           (IM1 & IM2 = METASTABLE LEVEL INDEX)
C
C                           ABOVE SUM IS OVER ALL METASTABLE LEVELS
C                           EXCEPT LEVEL ONE.
C
C
C AUTHOR:  HP SUMMERS ( UPGRADE OF BXSTVM BY PE BRIDEN)
C          K1/1/57
C          JET EXT. 4941
C
C DATE:    11/06/92
C
C-----------------------------------------------------------------------
C UNIX-IDL PORT:
C
C AUTHOR: DAVID H BROOKS, UNIVERSITY OF STRATHCLYDE
C
C DATE: UNKNOWN
C
C-----------------------------------------------------------------------
C PUT UNDER SCCS CONTROL:
C
C VERSION: 1.1 DATE: 10/05/96
C MODIFIED: WILLIAM OSBORN (TESSELLA SUPPORT SERVICES PLC)
C     - FIRST PUT UNDER SCCS
C
C-----------------------------------------------------------------------
C
C-----------------------------------------------------------------------
      INTEGER             IP,          NDMET,       NMET
      REAL*8              CRMAT(NDMET,NDMET),       STVM(NDMET)
      REAL*8              VRED(NDMET,NDMET)
```