ADAS Subroutine dcstkc

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      SUBROUTINE DCSTKC( NDLEV , NDMET  ,
     &                   NORD  , NMET   ,
     &                   IORDR , IMETR  ,
     &                   CC    , STCK   ,
     &                   CRED
     &                 )
C-------------------------------------------------------------------
C
C  ****************** FORTRAN77 SUBROUTINE: DCSTKC ******************
C
C  PURPOSE: TO STACK UP IN  'CRED'  THE TRANSITION RATE BETWEEN METASTA-
C           BLE LEVELS FOR A GIVEN TEMPERATURE STABLE LEVEL FOR A GIVEN
C           TEMPERATURE AND DENSITY.
C
C  CALLING PROGRAM:  XCOEF
C
C  SUBROUTINE:
C
C  INPUT : (I*4)  NDLEV  = MAXIMUM NUMBER OF ENERGY LEVELS ALLOWED
C  INPUT : (I*4)  NDMET  = MAXIMUM NUMBER OF METASTABLE LEVELS ALLOWED
C
C  INPUT : (I*4)  NORD   = NUMBER OF ORDINARY EXCITED LEVELS
C  INPUT : (I*4)  NMET   = NUMBER OF METASTABLE LEVELS
C
C  INPUT : (I*4)  IMETR() = INDEX OF METASTABLE IN COMPLETE LEVEL LIST
C                           (ARRAY SIZE = 'NDMET' )
C  INPUT : (I*4)  IORDR() =INDEX OF ORDINARY EXCITED LEVELS IN COMPLETE
C                           LEVEL LIST.
C                           (ARRAY SIZE = 'NDLEV' )
C
C  INPUT : (R*8)  CC(,)  = RATE MATRIX COVERING ALL TRANSITIONS
C                           (UNITS: SEC-1)
C                           VALUES FOR GIVEN TEMPERATURE AND DENSITY.
C                           1st DIMENSION: ENERGY LEVEL INDEX
C                           2nd DIMENSION: ENERGY LEVEL INDEX
C  INPUT : (R*8)  STCK(,) = POPULATION MATRIX COVERING ALL NON-METAST-
C                           ABLE/ORDINARY EXCITED LEVELS AS FUNCTION
C                           OF METASTABLE INDEX.
C                           VALUES FOR GIVEN TEMPERATURE AND DENSITY.
C                           1st DIMENSION: ORDINARY EXCITED LEVEL INDEX
C                           2nd DIMENSION: METASTABLE LEVEL INDEX
C
C  OUTPUT: (R*8)  CRED(,) = MATRIX  OF  TRANSITION  RATES  BETWEEN
C                           METASTABLE LEVELS.
C                           (UNITS: SEC-1)
C                           VALUES FOR GIVEN TEMPERATURE AND DENSITY.
C                           1st DIMENSION: METASTABLE LEVEL INDEX
C                           2nd DIMENSION: METASTABLE LEVEL INDEX
C
C          (I*4)  IM1    = METASTABLE LEVEL ARRAY INDEX
C          (I*4)  IM2    = METASTABLE LEVEL ARRAY INDEX
C          (I*4)  IS     = ORDINARY EXCITED LEVEL INDEX
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C
C
C ROUTINES: NONE
C
C NOTE:
C          CRED(IM1,IM2) = ( the transistion rate from IM2 to IM1 )
C                                        +
C                          SUM( (the transistion rate from ordinary
C                               level IS to IM1)  x (the population
C                               in metastable level IM2 that excite
C                               to oridinary level IS) )
C
C
C                          ABOVE SUM IS OVER ALL ORDINARY LEVELS.
C
C
C AUTHOR:  PAUL E. BRIDEN (TESSELLA SUPPORT SERVICES PLC)
C          K1/0/81
C          JET EXT. 4569
C
C DATE:    09/10/90
C
C UPDATE:  20/05/93 - P BRIDEN: STCK ARRAY CHANGED FROM REAL*8 -> REAL*4
C
C          apr28-95   A. Lanzafame STCK array back to real*8
C
C VERSION 1.1 DATE: 27-10-97
C RICHARD MARTIN
C PUT UNDER SCCS CONTROL
C
C----------------------------------------------------------------------
C
C----------------------------------------------------------------------
       INTEGER          IMETR(NDMET),              IORDR(NDLEV)
       INTEGER          NDLEV,      NDMET,     NMET,       NORD
       REAL*8           CC(NDLEV,NDLEV),       CRED(NDMET,NDMET)
       REAL*8           STCK(NDLEV,NDMET)
```