

ADAS Subroutine cxpmat

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SUBROUTINE  CXPMAT (PRMAT, NRES, MAXTE, MAXNE, MAXEB, EBRA, TERAY,  
    &    NERAY, NB, RCMAT, TERE, NERE, EBRE, ITRE,  
    &    INRE, IERE, IUNIT, INFILE, INA, ITA, IEA,  
    &    NBEN, NTEMP, NDEN, NLEV)  
-----  
C  
C ***** FORTRAN 77 ROUTINE : CXPMAT.FOR *****  
C  
C  PURPOSE : TO INTERROGATE AND EXTRACT THE  PROJECTION MATRICES  
C            WHICH ARE GENERATED USING ADAS311  
C  
C  INPUT   :  
C  
C            (I*4)      IUNIT : STREAM NUMBER FOR ACCESSING  
C  INPUT FILE.  
C            (I*4) NBEN  : MAXIMUM NUMBER OF ENERGIES.  
C            (I*4) NDEN  : MAXIMUM NUMBER OF DENSITIES.  
C            (I*4) NTEMP : MAXIMUM NUMBER OF TEMPS.  
C            (I*4) NLEV  : MAXIMUM NUMBER OF LEVELS  
C  CONTAINED IN THE PROJECTION  
C  AND RECOMBINATION MATRICES.  
C            (CHR) INFILE : INPUT FILENAME TO BE  
C  INTERROGATED.  
C  
C  OUTPUT  :  
C  
C            (R*8) PRMAT() : PROJECTION MATRIX.  
C  1ST DIM.: LEVEL INDEX.  
C  2ND DIM.: LEVEL INDEX.  
C  3RD DIM.: ENERGY INDEX.  
C  4TH DIM.: DENSITY INDEX.  
C  5TH DIM.: TEMPERATURE INDEX.  
C            (R*8) RCMAT() : COLLISIONAL-RADIATIVE  
C  RECOMBINATION COEFFICIENTS.  
C  1ST DIM.: LEVEL INDEX.  
C  2ND DIM.: ENERGY INDEX.  
C  3RD DIM.: DENSITY INDEX.  
C  4TH DIM.: TEMPERATURE INDEX.  
C            (R*8) EBRA() : ARRAY CONTAINING THE NEUTRAL  
C  BEAM ENERGY (eV/amu).  
C  1ST DIM.: ENERGY INDEX.  
C            (R*8) TERAY() : ARRAY CONTAINING THE  
C  TEMPERATURE (eV).  
C  1ST DIM.: TEMPERATURE INDEX.  
C            (R*8) NERAY() : ARRAY CONTAINING THE ELECTRON  
C  DENSITY.  
C  1ST DIM.: DENSITY INDEX.  
C            (R*8) TERE  : REFERENCE TEMPERATURE (eV).  
C            (R*8) NERE  : REFERENCE ELECTRON DENSITY (cm-3).  
C            (R*8) EBRE  : REFERENCE BEAM ENERGY (eV amu-1).  
C            (R*8) NB    : NEUTRAL BEAM DENSITY (cm-3)
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C          ROUTINE      SOURCE      BRIEF DESCRIPTION
C          -----
C          CCFIND       ADAS        IDENTIFIED REPEATED VALUES IN ARRAY.
C          CCSORT       ADAS        SORTS ARRAY VALUES INTO INCREASING ORDER.
C          CCFILL       ADAS        FILLS ARRAY WITH CORRESPONDING INDEX.
C
C
C          AUTHOR      : HARVEY ANDERSON
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C                      ANDERSON@PHYS.STRATH.AC.UK
C
C          DATE        : 30/8/99
C
C          VERSION     : 1.2
C          DATE        : 23-01-2001
C
C          MODIFIED    : Martin O'Mullane
C                      Declaration of variables is not standard. NTEMP is
C                      defined after it is first used to dimension a
C                      variable length input array. Reconfigure variable
C                      definitions to follow ADAS conventions.
C
C-----

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CHARACTER*80      INFILE
INTEGER           IEA (NBENG), IEREF,      INA (NDENS), INREF
INTEGER           ITA (NTEMP), ITREF,     IUNIT,      MAXEB
INTEGER           MAXNE,      MAXTE,     NBENG,      NDENS
INTEGER           NLEV,      NRES,      NTEMP
REAL*8           EBRAY (NBENG),      EBREF,      NB
REAL*8           NERAY (NDENS),      NEREF
REAL*8           PRMAT (NLEV, NLEV, NBENG, NDENS, NTEMP)
REAL*8           RCMAT (NLEV, NBENG, NDENS, NTEMP)
REAL*8           TERAY (NTEMP),      TEREf

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