

ADAS Subroutine a2data

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      SUBROUTINE A2DATA( DSFULL , INDXREF , TITLE , CAMETH , Z0 ,
&      Z      , ZEFF   , INDL  , INDU  , EI    ,
&      EJ    , WI     , WJ    , ACOEFF , S     ,
&      FIJ   , EIJ    , IXTYP , FXC2  , FXC3  ,
&      IXOPS , IBPTS  , IFPTS , IDIFF , ICT   ,
&      ITOUT , XA , YA , APOMA , DIFOMA , TOA  ,
&      GOA   , APGOA  , EXCRA , DEXCRA , GBARFA,
&      ISTDIM , IREAD  , IZ    , IZ0   , GF    ,
&      BCVAL
&      )
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C-----
C
C ***** FORTRAN77 SUBROUTINE A2DATA *****
C
C PURPOSE: TO REFRESH A DATA INDEX FROM AN ADAS102 ARCHIVE. READS
C           IN THE INDEX CODE A-ADAS, B-BURGESS AND THE THE REST OF
C           THE DATA AS APPROPRIATE.
C
C CALLING PROGRAM:
C           ADAS102.FOR
C
C INPUT:
C           (C*80) DSFULL  - THE USERS' CHOSEN ARCHIVE FILE NAME.
C           (I*4)  INDXREF - THE INDEX NUMBER TO REFRESH FROM.
C           (C*40) TITLE   - THE INFORMATION LINE IN THE ARCHIVE
C                           FILE.
C           (C*4)  CAMETH  - THE TAG TO DISTINGUISH BETWEEN THE
C                           TWO TYPES OF ANALYSIS.
C                           A - ADAS, B- BURGESS
C           (R*8)  GF      - THE WEIGHTED OSCILLATOR STRENGTH
C           (R*8)  BCVAL   - THE BURGESS SCALABLE PARAMETER C.
C           (I*4)  ISTDIM = THE MAXIMUM ARRAY DIMENSION
C           (I*4)  IREAD  = THE INPUT UNIT
C
C OUTPUTS:
C           (R*8)  Z0      = NUCLEAR CHARGE OF ION
C           (R*8)  Z       = ION CHARGE
C           (R*8)  ZEFF    = ION CHARGE + 1
C           (I*4)  INDL    = LOWER LEVEL INDEX (USER CHOICE)
C           (I*4)  INDU    = UPPER LEVEL INDEX (USER CHOICE)
C           (R*8)  WI      = LOWER LEVEL STATISTICAL WEIGHT
C           (R*8)  WJ      = UPPER LEVEL STATISTICAL WEIGHT
C           (R*8)  EI      = LOWER LEVEL ENERGY (IN SELECTED UNITS)
C           (R*8)  EJ      = UPPER LEVEL ENERGY
C           (R*8)  ACOEFF  = TRANSITION PROBABILITY (IN ABOVE FORM,
C                           DIPOLE CASE ONLY)
C           (I*4)  IXTYP  = 1  DIPOLE TRANSITION
C                           = 2  NON-DIPOLE TRANSITION
C                           = 3  SPIN CHANGE TRANSITION
C                           = 4  OTHER
C           (I*4)  IBPTS  = 0  BAD POINT OPTION OFF
C                           = 1  BAD POINT OPTION ON
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C      (I*4)  IFPTS  = 1  SELECT ONE POINT OPTIMISING
C
C      (I*4)  IXOPS  = 0  OPTIMISING OFF
C
C      (I*4)  IDIFF  = 0  RATIO FITTING FOR DIPOLE X-SECT (ONLY
C
C      (I*4)  IDIFF  = 1  DIFFERENCE FITTING FOR DIPOLE X-SECT
C
C      (R*8)  S      = LINE STRENGTH
C      (R*8)  FIJ    = OSCILLATOR STRENGTH
C      (R*8)  EIJ    = TRANSITION ENERGY
C      (R*8)  FXC2   = SPLINING VARIABLE
C      (R*8)  FXC3   = SPLINING VARIABLE
C      (I*4)  ICT    = NUMBER OF X-SECTIONS
C      (I*4)  ITOUT  = NUMBER OF TEMPERATURES
C      (R*8)  XA     = ENERGY (PARAMETER X)
C      (R*8)  YA     = OMEGA (COLLISION STRENGTH)
C      (R*8)  APOMA  = APPROXIMATE OMEGA
C      (R*8)  DIFOMA = DIFFERENCE BETWEEN YA & APOMA
C      (R*8)  TOA    = TEMPERATURE SET
C      (R*8)  GOA    = GAMMA (EFFECTIVE COLLISION STRENGTHS)
C      (R*8)  APGOA  = APPROXIMATE GAMMA
C      (R*8)  EXCRA  = EXCITATION RATE COEFFICIENT
C      (R*8)  DEXCRA = DEEXCITATION RATE COEFFICIENT
C      (R*8)  GBARFA = G BAR FUNCTION
C      (I*4)  ISTDIM = THE MAXIMUM ARRAY DIMENSION
C      (I*4)  IREAD  = THE INPUT UNIT

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C ROUTINES: NONE

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C VERSION 1.2 DATE: 18/05/99
C MODIFIED: HUGH SUMMERS

C - CORRECTED CONFUSION ABOUT NCHAR AND NELEC

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CHARACTER*4      CAMETH
CHARACTER*80     DSFULL
CHARACTER*40     TITLE
INTEGER          IBPTS,      ICT,      IDIFF,      IFPTS
INTEGER          INDL,      INDU,      INDXREF,     IREAD
INTEGER          ISTDIM,    ITOUT,    IXOPS,      IXTYP
INTEGER          IZ,        IZ0
REAL*8           ACOEFF,    APGOA (ISTDIM)
REAL*8           APOMA (ISTDIM),      BCVAL
REAL*8           DEXCRA (ISTDIM),      DIFOMA (ISTDIM)
REAL*8           EI,        EIJ,      EJ
REAL*8           EXCRA (ISTDIM),      FIJ,      FXC2
REAL*8           FXC3,      GBARFA (ISTDIM),      GF

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REAL*8          GOA(ISTDIM), S,          TOA(ISTDIM), WI
REAL*8          WJ,          XA(ISTDIM), YA(ISTDIM), Z
REAL*8          Z0,          ZEFF
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