

## ADAS Subroutine xxdata\_20

```
      SUBROUTINE xxdata_20( IUNIT  , NDLEV  , NDTEM  , NDTRN  ,
&                          ELEM    , IZ     , IZ0    , IZ1    ,
&                          IL      ,
&                          IA      , CSTRGA , ISA    , ILA    , XJA    ,
&                          NV      ,
&                          TEA    , DENSA  , PRESA  , RNHNE  , TMA    ,
&                          ITRAN   ,
&                          I1A    , I2A    , APWL   , SWL    , GFT    ,
&                          LVALID , INDX
&                          )
```

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C-----
C
C ***** FORTRAN77 SUBROUTINE: xxdata_20 *****
C
C PURPOSE:  TO FETCH DATA FROM INPUT GFT DATA SET OF TYPE ADF20.
C
C CALLING PROGRAM: ADAS506
C
C          THE UNITS USED IN THE DATA FILE ARE TAKEN AS FOLLOWS:
C
C          ELECTRON TEMPERATURE: KELVIN
C          ELECTRON DENSITY      : CM-3
C          ELECTRON PRESSURE     : K CM-3
C          TIME                   : NOT SPECIFIED
C          WAVELENGTH            : ANGSTROM
C          GFT COEFFT.           : CM3 SEC-1
C
C SUBROUTINE:
C
C INPUT : (I*4)  IUNIT   = UNIT TO WHICH INPUT FILE IS ALLOCATED
C INPUT : (I*4)  NDLEV   = MAXIMUM NUMBER OF LEVELS THAT CAN BE READ
C INPUT : (I*4)  NDTEM   = MAXIMUM NUMBER OF TEMPERATURES
C INPUT : (I*4)  NDTRN   = MAX. NUMBER OF TRANSITIONS THAT CAN BE READ
C
C OUTPUT: (C*2)  ELEM    = ELEMENT SYMBOL.
C OUTPUT: (I*4)  IZ      = RECOMBINED ION CHARGE READ
C OUTPUT: (I*4)  IZ0     =          NUCLEAR CHARGE READ
C OUTPUT: (I*4)  IZ1     = RECOMBINING ION CHARGE READ
C                   (NOTE: IZ1 SHOULD EQUAL IZ+1)
C
C OUTPUT: (I*4)  IL      = INPUT DATA FILE: NUMBER OF ENERGY LEVELS
C
C OUTPUT: (I*4)  IA()    = ENERGY LEVEL INDEX NUMBER
C OUTPUT: (C*18) CSTRGA() = NOMENCLATURE/CONFIGURATION FOR LEVEL 'IA()'
C OUTPUT: (I*4)  ISA()   = MULTIPLICITY FOR LEVEL 'IA()'
C                   NOTE: (ISA-1)/2 = QUANTUM NUMBER (S)
C OUTPUT: (I*4)  ILA()   = QUANTUM NUMBER (L) FOR LEVEL 'IA()'
C OUTPUT: (R*8)  XJA()   = QUANTUM NUMBER (J-VALUE) FOR LEVEL 'IA()'
C                   NOTE: (2*XJA)+1 = STATISTICAL WEIGHT
C
C OUTPUT: (I*4)  NV      = INPUT DATA FILE: NUMBER OF TEMP/DENS/PRESS/
```



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C ROUTINES: NONE
C
C AUTHOR:  H. P. SUMMERS, JET
C          K1/1/57
C          JET EXT. 4941
C
C DATE:    07/04/94
C
C UPDATE:  APR18-95
C          A. C. LANZAFAME, DPAP UNIVERSITY OF STRATHCLYDE
C          TRANSITION INDEX (INDX) ADDED. USED IN DEM CODES
C          TO IDENTIFY THE TRANSITION
C
C          CHARACTER CSTRGA(NDLEV)*(*) changed to CHARACTER*18 CSTRGA(NDLEV)
C          after experinced unstable behaviour on Sun workstation
C
C UPDATE:
C VERSION:      1.2          DATE:    09-11-95
C MODIFIED: Alessandro Lanzafame
C              - Commented out superfluous variables
C
C-----
C
C NOTES: Copied from e6data.for. This is v1.1 of xxdata_20.
C
C
C VERSION   : 1.1
C DATE     : 06-06-2003
C MODIFIED : Martin O'Mullane
C          - First version
C
C-----

```

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CHARACTER*18      CSTRGA(NDLEV)
CHARACTER*2       ELEM
INTEGER           I1A(NDTRN), I2A(NDTRN), IA(NDLEV), IL
INTEGER           I1A(NDLEV), INDX(NDTRN), ISA(NDLEV), ITRAN
INTEGER           IUNIT, IZ, IZ0, IZ1
INTEGER           NDLEV, NDTEM, NDTRN, NV
LOGICAL           LVALID
REAL*8           APWL(NDTRN), DENSA(NDTEM)
REAL*8           GFT(NDTEM,NDTRN), PRESA(NDTEM)
REAL*8           RHNHE(NDTEM), SWL(NDTRN)
REAL*8           TEA(NDTEM), TMA(NDTEM), XJA(NDLEV)

```