

## ADAS Subroutine d7data

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      SUBROUTINE D7DATA( IUNIT , NDLEV , NDTRN ,
&                      TITLED , IZ      , IZ0   , IZ1   , BWNO   ,
&                      IL      ,
&                      IA      , CSTRGA , ISA   , ILA   , XJA   , WA
&                      )
```

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C
C ***** FORTRAN77 SUBROUTINE: D7DATA *****
C
C PURPOSE:  TO FETCH LEVEL DATA FROM INPUT COPASE DATA SET.
C
C CALLING PROGRAM: ADAS407
C
C DATA:
C          THE UNITS USED IN THE DATA FILE ARE TAKEN AS FOLLOWS:
C
C          IONISATION POTENTIAL: WAVE NUMBER (CM-1)
C          INDEX LEVEL ENERGIES: WAVE NUMBER (CM-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)  NDTRN   = MAX. NUMBER OF TRANSITIONS THAT CAN BE READ
C
C OUTPUT: (C*3)  TITLED   = 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 OUTPUT: (R*8)  BWNO     = IONISATION POTENTIAL (CM-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 OUTPUT: (R*8)  WA()     = ENERGY RELATIVE TO LEVEL 1 (CM-1) FOR LEVEL
C                          'IA()'
C
C          (I*4)  I4UNIT   = FUNCTION (SEE ROUTINE SECTION BELOW)
C          (I*4)  I        = GENERAL USE.
C          (I*4)  IABT     = RETURN CODE FROM 'R8FCTN' (0 => NO ERROR)
C                          OR FROM INTERROGATION OF 'C7'
C          (I*4)  IFIRST   = BYTE POSITION OF START OF NUMBER IN BUFFER
C          (I*4)  ILAST    = BYTE POSITION OF END OF NUMBER IN BUFFER
```

C (I\*4) IWORD = THE WORD POSITION OF THE REQUIRED DATA IN  
 C A STRING TO BE INTERROGATED BY XXWORD.  
 C (I\*4) J = GENERAL USE.  
 C (I\*4) LENCST = BYTE LENGTH OF STRING CSTRGA()  
 C (I\*4) NWORDS = NUMBER OF NUMBERS STORED IN BUFFER  
 C (I\*4) ILINE = ENERGY LEVEL INDEX FOR CURRENT LINE  
 C (I\*4) IRECL = RECORD LENGTH OF INPUT DATASET (<=128)  
 C  
 C (C\*7) C7 = USED TO PARSE VALUE FOR XJA()  
 C (C\*7) CDELIM = DELIMITERS FOR INPUT OF DATA FROM HEADERS  
 C (C\*18) C18 = USED TO PARSE VALUE TO CSTRGA()  
 C (C\*80) CLINE = CURRENT ENERGY LEVEL INDEX PARAMETER LINE  
 C (C\*128) BUFFER = GENERAL STRING BUFFER STORAGE  
 C  
 C (L\*4) LDATA = IDENTIFIES WHETHER THE END OF AN INPUT  
 C SECTION IN THE DATA SET HAS BEEN LOCATED.  
 C (.TRUE. => END OF SECTION REACHED)  
 C

C ROUTINES:

ROUTINE	SOURCE	BRIEF DESCRIPTION
XXWORD	ADAS	EXTRACT POSITION OF NUMBER IN BUFFER
I4UNIT	ADAS	FETCH UNIT NUMBER FOR OUTPUT OF MESSAGES
R8FCTN	ADAS	CONVERTS FROM CHARACTER TO REAL VARIABLE

C ROUTINES: NONE

C AUTHOR: H. P. SUMMERS, JET  
 C K1/1/47  
 C JET EXT. 4941  
 C

C DATE: 19/05/94

C UPDATE: 12/07/94 - H. P. SUMMERS - ALLOWED DUMMY BARE NUCLEUS FILE  
 C TO BE READ BY DETECTING IZ0=IZ  
 C

C UNIX-IDL PORT:

C WILLIAM OSBORN, TESSELLA SUPPORT SERVICES PLC.

C DATE: 25TH MARCH 1996

C VERSION: 1.1 DATE: 25-03-96

C MODIFIED: WILLIAM OSBORN

C - FIRST VERSION.

C VERSION: 1.2 DATE: 09-09-96

C MODIFIED: WILLIAM OSBORN / PAUL BRIDEN

C - INSTEAD OF USING FORMAT SPECIFIER F15.0 WHEN  
 C INTERNALLY READING A FLOATING POINT NUMBER,  
 C CREATE THE APPROPRIATE SPECIFIER WITHIN CF0RM7  
 C AND USE THIS.  
 C

C-----  
C-----

CHARACTER* (*)	CSTRGA (NDLEV)			
CHARACTER*3	TITLED			
INTEGER	IA (NDLEV) ,	IL,	ILA (NDLEV)	
INTEGER	ISA (NDLEV) ,	IUNIT,	IZ,	IZ0
INTEGER	IZ1,	NDLEV,	NDTRN	
REAL*8	BWNO,	WA (NDLEV) ,	XJA (NDLEV)	