

## ADAS Subroutine h9wr11

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SUBROUTINE H9WR11( IUNT11 , DSNINP ,
&                 NDLEV , NDTRN , NVMAX , NDMET ,
&                 DATE ,
&                 TITLED , IZ      , IZ0      , IZ1      , BWNOA ,
&                 IL      ,
&                 CSTRGA , ISA      , ILA      , XJA      , WA      ,
&                 IPLA   , ZPLA     ,
&                 NVN    , SCEFN    ,
&                 icnte  , icnts    , ietrn   , istrn   ,
&                 TCODE , I1A      , I2A      , AVAL     , SCOMUP ,
&                 SCOMDN , DTYPE    , KAPPA   , ADF37   , druval ,
&                 lbeth  , beth     , npl     , cprta
&                 )
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C
C ***** FORTRAN77 SUBROUTINE: H9WR11 *****
C
C PURPOSE:  PRODUCES AN ADF04 TYPE 3 FILE, WHERE THE CONTENTS IS
C           CONSIDERED AS THE OUTPUT DATA SET FROM ADAS809.
C
C CALLING PROGRAM: ADAS809
C
C
C SUBROUTINE:
C
C INPUT : (I*4)  IUNT11  = UNIT TO WHICH INPUT FILE IS ALLOCATED
C INPUT : (C*80) DSNINP  = NAME OF INPUT ADF04 FILE
C INPUT : (I*4)  NDLEV   = MAXIMUM NUMBER OF LEVELS
C INPUT : (I*4)  NDTRN   = MAX. NUMBER OF TRANSITIONS
C INPUT : (I*4)  NVMAX   = MAX. NUMBER OF TEMPERATURES
C INPUT : (I*4)  NDMET   = MAX. NUMBER OF METASTABLES
C INPUT : (C*8)  DATE    = DATE (AS DD/MM/YY) .
C INPUT : (C*3)  TITLED  = ELEMENT SYMBOL.
C INPUT : (I*4)  IZ      = RECOMBINED ION CHARGE READ
C INPUT : (I*4)  IZ0     = NUCLEAR CHARGE READ
C INPUT : (I*4)  IZ1     = RECOMBINING ION CHARGE READ
C                   (NOTE: IZ1 SHOULD EQUAL IZ+1)
C INPUT : (R*8)  BWNO    = IONISATION POTENTIAL (CM-1)
C
C INPUT : (I*4)  IL      = INPUT DATA FILE: NUMBER OF ENERGY LEVELS
C
C INPUT : (C*18) CSTRGA() = NOMENCLATURE/CONFIGURATION FOR LEVEL 'IA()'
C INPUT : (I*4)  ISA     = MULTIPLICITY FOR LEVEL 'IA()'
C                   NOTE: (ISA-1)/2 = QUANTUM NUMBER (S)
C INPUT : (I*4)  ILA     = QUANTUM NUMBER (L) FOR LEVEL 'IA()'
C INPUT : (R*8)  XJA     = QUANTUM NUMBER (J-VALUE) FOR LEVEL 'IA()'
C                   NOTE: (2*XJA)+1 = STATISTICAL WEIGHT
C INPUT : (R*8)  WA      = ENERGY RELATIVE TO LEVEL 1 (CM-1) FOR LEVEL
C                   'IA()'
C INPUT : (I*4)  IPLA(,) = PARENT INDEX FOR CONTRIBUTION TO IONIS.
C                   OF LEVEL
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C 1ST DIMENSION: PARENT INDEX  
 C 2ND DIMENSION: LEVEL INDEX  
 C INPUT : (R\*8) ZPLA(,) = EFF. ZETA PARAM. FOR CONTRIBUTION TO IONIS.  
 C OF LEVEL  
 C 1ST DIMENSION: PARENT INDEX  
 C 2ND DIMENSION: LEVEL INDEX  
 C  
 C INPUT : (I\*4) NVN = INPUT DATA FILE: NUMBER OF GAMMA/TEMPERATURE  
 C PAIRS FOR A GIVEN TRANSITION.  
 C INPUT : (R\*8) SCEFN() = INPUT DATA FILE: ELECTRON TEMPERATURES (K)  
 C (INITIALLY JUST THE MANTISSA. SEE 'ITPOW()')  
 C (NOTE: TE=TP=TH IS ASSUMED)  
 C  
 C INPUT : (I\*4) ITRNE = INPUT DATA FILE: NO OF EXCITATION TRANSITIONS  
 C INPUT : (I\*4) ITRNS = INPUT DATA FILE: NO OF IONISATION TRANSITIONS  
 C  
 C INPUT : (C\*1) TCODE() = TRANSITION: DATA TYPE POINTER:  
 C ' ' => Electron Impact Transition  
 C 'P' => Proton Impact Transition  
 C 'H' => Charge Exchange Recombination  
 C 'R' => Free Electron Recombination  
 C INPUT : (I\*4) I1A() = TRANSITION:  
 C LOWER ENERGY LEVEL INDEX (CASE ' ' & 'P')  
 C SIGNED PARENT INDEX (CASE 'H' & 'R')  
 C INPUT : (I\*4) I2A() = TRANSITION:  
 C UPPER ENERGY LEVEL INDEX (CASE ' ' & 'P')  
 C CAPTURING LEVEL INDEX (CASE 'H' & 'R')  
 C INPUT : (R\*8) AVAL() = TRANSITION:  
 C A-VALUE (SEC-1) (CASE ' ' )  
 C NEUTRAL BEAM ENERGY (CASE 'H' )  
 C NOT USED (CASE 'P' & 'R')  
 C INPUT : (R\*8) SCOMN(,) = TRANSITION:  
 C GAMMA VALUES (CASE ' ' & 'P')  
 C RATE COEFFT. (CM3 SEC-1) (CASE 'H' & 'R')  
 C 1ST DIMENSION - TEMPERATURE 'SCEF()'  
 C 2ND DIMENSION - TRANSITION NUMBER

C ROUTINES:

ROUTINE	SOURCE	BRIEF DESCRIPTION
XXNAME	ADAS	FINDS REAL NAME OF USER
XXWSTR	ADAS	WRITES STRING TO A UNIT WITH TRAILING BLANKS REMOVED

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C JA8.08

C TEL. 0141-553-4196

C DATE: 30/11/01

C UPDATE:

CC

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CHARACTER*80	ADF37			
CHARACTER*9	CPRTA (NDMET)			
CHARACTER*18	CSTRGA (NDLEV)			
CHARACTER*8	DATE			
CHARACTER*80	DSNINP			
CHARACTER	TCODE (NDTRN)			
CHARACTER*3	TITLED			
INTEGER	DTYPE,	I1A (NDTRN) ,	I2A (NDTRN) ,	ICNTE
INTEGER	ICNTS,	IETRN (NDTRN) ,		IL
INTEGER	ILA (NDLEV) ,	IPLA (NDMET, NDLEV)		
INTEGER	ISA (NDLEV) ,	ISTRN (NDTRN) ,		IUNT11
INTEGER	IZ,	IZ0,	IZ1,	NDLEV
INTEGER	NDMET,	NDTRN,	NPL,	NVMAX
INTEGER	NVN			
LOGICAL	LBETH			
REAL*8	AVAL (NDTRN) ,	BETH (NDTRN) ,	BWNOA (NDMET)	
REAL*8	DRUVAL,	KAPPA,	SCEF (NVMAX)	
REAL*8	SCOMDN (NVMAX, NDTRN) ,		SCOMUP (NVMAX, NDTRN)	
REAL*8	WA (NDLEV) ,	XJA (NDLEV) ,	ZPLA (NDMET, NDLEV)	