

ADAS Subroutine bxwr11

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      SUBROUTINE BXWR11( IUNIT , DSNINC , TITLED ,
&                      NDLEV , NDTEM , NDDEN , NDMET ,
&                      IZ    , IZ0   , IZ1   , BWNO  ,
&                      IL    , NMET  , NORD  ,
&                      MAXT   , MAXD  , ICNTR , ICNTH ,
&                      IA    , ISA   , ILA   , XJA   ,
&                      CSTRGA ,
&                      IMETR , IORDR , TEA   , DENSA ,
&                      STCKM , STVR  , STVH  ,
&                      STVRM , STVHM , STACK
&                      )
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C ***** FORTRAN77 SUBROUTINE: BXWR11 *****
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C
C PURPOSE:  TO OUTPUT DATA TO CONTOUR PASSING FILE.
C           POPULATION DATA FOR DIAGNOSTIC USE.
C
C CALLING PROGRAM: ADAS205/ADAS206
C
C
C SUBROUTINE:
C
C INPUT : (I*4)  IUNIT   = OUTPUT UNIT NUMBER FOR RESULTS
CA INPUT : (C*80) DSNINC  = INPUT COPASE DATA SET NAME (IN QUOTES).
C INPUT : (C*3)  TITLED  = ELEMENT SYMBOL.
C
C INPUT : (I*4)  NDLEV   = MAXIMUM NUMBER OF LEVELS ALLOWED
C INPUT : (I*4)  NDTEM   = MAXIMUM NUMBER OF TEMPERATURES ALLOWED
C INPUT : (I*4)  NDDEN   = MAXIMUM NUMBER OF DENSITIES ALLOWED
C INPUT : (I*4)  NDMET   = MAXIMUM NUMBER OF METASTABLES ALLOWED
C
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      = NUMBER OF ENERGY LEVELS
C INPUT : (I*4)  NMET    = NUMBER OF METASTABLES LEVELS: 1<=NMET<=NDMET
C INPUT : (I*4)  NORD    = NUMBER OF ORDINARY LEVELS ('IL' - 'NMET')
C
C INPUT : (I*4)  MAXT    = NUMBER OF INPUT TEMPERATURES ( 1 -> 'NDTEM' )
C INPUT : (I*4)  MAXD    = NUMBER OF INPUT DENSITIES ( 1 -> 'NDDEN' )
C INPUT : (I*4)  ICNTR   = NUMBER OF FREE ELECTRON RECOMBINATIONS INPUT
C INPUT : (I*4)  ICNTH   = NO. OF CHARGE EXCHANGE RECOMBINATIONS INPUT
C
C INPUT : (I*4)  IA ( )  = ENERGY LEVEL INDEX NUMBER
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 ( )'
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C                                     NOTE: (2*XJA)+1 = STATISTICAL WEIGHT
C
C INPUT : (C*18) CSTRGA() = NOMENCLATURE/CONFIGURATION FOR LEVEL 'IA()'
C
C INPUT : (I*4)  IMETR() = INDEX OF METASTABLE IN COMPLETE LEVEL LIST
C INPUT : (I*4)  IORDR() = INDEX OF ORDINARY LEVELS IN COMPLETE LEVEL
C LIST.
C INPUT : (R*8)  TEA()   = ELECTRON TEMPERATURES (UNITS: KELVIN)
C INPUT : (R*8)  DENSA() = ELECTRON DENSITIES   (UNITS: CM-3)
C
C INPUT : (R*8)  STCKM(,,) = METASTABLE POPULATIONS STACK
C                               1st DIMENSION: METASTABLE INDEX
C                               2nd DIMENSION: TEMPERATURE INDEX
C                               3rd DIMENSION: DENSITY INDEX
C INPUT : (R*8)  STVR(,,)  = FREE ELECTRON RECOMBINATION COEFFICIENTS
C                               1st DIMENSION: ORDINARY LEVEL INDEX
C                               2nd DIMENSION: TEMPERATURE INDEX
C                               3rd DIMENSION: DENSITY INDEX
C INPUT : (R*8)  STVH(,,)  = CHARGE EXCHANGE COEFFICIENTS
C                               1st DIMENSION: ORDINARY LEVEL INDEX
C                               2nd DIMENSION: TEMPERATURE INDEX
C                               3rd DIMENSION: DENSITY INDEX
C INPUT : (R*8)  STVRM(,,) = METASTABLE FREE ELECTRON RECOMBINATION
C COEFFICIENTS.
C                               1st DIMENSION: METASTABLE INDEX
C                               2nd DIMENSION: TEMPERATURE INDEX
C                               3rd DIMENSION: DENSITY INDEX
C INPUT : (R*8)  STVHM(,,) = METASTABLE CHARGE EXCHANGE COEFFICIENTS
C                               1st DIMENSION: METASTABLE INDEX
C                               2nd DIMENSION: TEMPERATURE INDEX
C                               3rd DIMENSION: DENSITY INDEX
C INPUT : (R*4)  STACK(,,,) = POPULATION DEPENDENCE
C                               1st DIMENSION: ORDINARY LEVEL INDEX
C                               2nd DIMENSION: METASTABLE INDEX
C                               3rd DIMENSION: TEMPERATURE INDEX
C                               4th DIMENSION: DENSITY INDEX
C
C          (I*4) I          = GENERAL USE
C          (I*4) J          = GENERAL USE
C          (I*4) K          = GENERAL USE
C          (I*4) L          = GENERAL USE
C
C NOTE:
C          THIS OUTPUT DATA IS FOR SUBSEQUENT INPUT INTO THE DIAGNOSTIC
C          AND CONTOUR GRAPHING PROGRAM 'CONTOUR'.
C
C ROUTINES: NONE
C
C AUTHOR:  PAUL E. BRIDEN (TESSELLA SUPPORT SERVICES PLC)
C          K1/0/37
C          JET EXT. 5023
C

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C DATE: 09/10/90

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C UPDATE: 20/05/93 - PE BRIDEN - ADAS91: TO REFLECT CHANGES IN BXDATA
C THE FOLLOWING ARRAY DIMENSION/
C SIZE CHANGES WERE MADE:

1) CHARACTER CSTRGA *12 -> *18
(FORMAT STMT 1003 CHANGED)

C UPDATE: 20/05/93- P BRIDEN: STACK ARRAY CHANGED FROM REAL*8 -> REAL*4

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CHARACTER*18	CSTRGA (NDLEV)
CHARACTER*80	DSNINC
CHARACTER*3	TITLED
INTEGER	IA (NDLEV) , ICNTH, ICNTR, IL
INTEGER	ILA (NDLEV) , IMETR (NDMET)
INTEGER	IORDR (NDLEV) , ISA (NDLEV) , IUNIT
INTEGER	IZ, IZ0, IZ1, MAXD
INTEGER	MAXT, NDDEN, NDLEV, NDMET
INTEGER	NDTEM, NMET, NORD
REAL*8	BWNO, DENSA (NDDEN)
REAL	STACK (NDLEV, NDMET, NDTEM, NDDEN)
REAL*8	STCKM (NDMET, NDTEM, NDDEN)
REAL*8	STVH (NDLEV, NDTEM, NDDEN)
REAL*8	STVHM (NDMET, NDTEM, NDDEN)
REAL*8	STVR (NDLEV, NDTEM, NDDEN)
REAL*8	STVRM (NDMET, NDTEM, NDDEN) , TEA (NDTEM)
REAL*8	XJA (NDLEV)