

ADAS Subroutine cxtbex

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      SUBROUTINE CXTBEX( MXNSHL , IZ1      , NBOT      , NTOP      ,  
&                      NGRND  , TEV      , TBQEX     , QTHEX     ,  
&                      FTHEX  
&                      )
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C ***** FORTRAN77 SUBROUTINE: CXTBEX *****

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C PURPOSE: SETS UP A TABLE OF ELECTRON IMPACT EXCITATION RATE
C COEFFICIENTS FOR A HYDROGENIC ION FROM THE GROUND STATE
C TO EXCITED NL-LEVELS.

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C CALLING PROGRAM: ADAS308 , C6TBEX.

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C INPUT : (I*4) MXNSHL = MAXIMUM VALUE OF N QUANTUM NUMBER.

C INPUT : (I*4) IZ1 = ION CHARGE.

C INPUT : (I*4) NBOT = MINIMUM PRINCIPAL QUANTUM NUMBER.

C INPUT : (I*4) NTOP = MAXIMUM PRINCIPAL QUANTUM NUMBER.

C INPUT : (I*4) NGRND =

C INPUT : (R*8) TEV = ELECTRON TEMPERATURE.

C UNITS: EV

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C OUTPUT: (R*8) TBQEX() = TABLE OF NL-LEVEL EXCITATION RATE
C COEFFICIENTS.

C UNITS:
C DIMENSION: REFERENCED BY FUNC I4IDFL(N,L).

C OUTPUT: (R*8) QTHEX() = TABLE OF N-LEVEL EXCITATION RATE
C COEFFICIENTS.

C UNITS:
C DIMENSION: N-SHELL

C OUTPUT: (R*8) FTHEX() = TABLE OF NL-LEVEL EXCITATION RATE
C COEFFICIENTS EXPRESSED AS FRACTION OF
C CORRESPONDING N-LEVEL RATE.

C DIMENSION: REFERENCED BY FUNC I4IDFL(N,L).

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C PARAM : (I*4) MXN = 'MXNSHL'.

C PARAM : (R*8) P1 =

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C (I*4) N = N QUANTUM NUMBER.

C (I*4) L = L QUANTUM NUMBER.

C (I*4) IDL = L-RESOLVED TABLE INDEX.

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C (R*8) ATE =

C (R*8) RDE =

C (R*8) ETE =

C (R*8) FACT =

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C (R*8) GAMA() = TABLE OF EXCITATION RATE PARAMETERS.

C UNITS:

C DIMENSION: REFERENCED BY N QUANTUM NUMBER.

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C ROUTINES:
C      ROUTINE      SOURCE      BRIEF DESCRIPTION
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C      I4UNIT       ADAS        RETURNS UNIT NO. FOR OUTPUT OF MESSAGES.
C      I4IDFL       ADAS        RETURNS UNIQUE INDEX GIVEN QUANTUM
C                               NUMBERS N AND L.
C      CXGHNL       ADAS        CALCULATES EXCITATION RATE PARAMETERS.
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C           K1/0/81
C           JET EXT. 5183
C
C DATE:    05/10/93
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C      INTEGER      IZ1,          MXNSHL,      NBOT,      NGRND
C      INTEGER      NTOP
C      REAL*8       FTHEX ( (MXNSHL* (MXNSHL+1) ) / 2 )
C      REAL*8       QTHEX (MXNSHL)
C      REAL*8       TBQEX ( (MXNSHL* (MXNSHL+1) ) / 2 ) ,      TEV

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