

ADAS Subroutine c6tbex

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      SUBROUTINE C6TBEX( MXNSHL , MXJSHL , IZ1      , NBOT      ,  
&                      NTOP      , NGRND      , TEV      , QTHEX      ,  
&                      FTHEXJ  
&                      )
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C ***** FORTRAN77 SUBROUTINE: C6TBEX *****

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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: ADAS306.

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C INPUT : (I*4) MXNSHL = MAXIMUM NO. OF N SHELLS.
C INPUT : (I*4) MXJSHL = MAXIMUM NO. J SUB-SHELLS.
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) QTHEX() = TABLE OF N-LEVEL EXCITATION RATE
C COEFFICIENTS.
C UNITS:
C DIMENSION: N-SHELL
C OUTPUT: (R*8) FTHEXJ(,) = TABLE OF NLJ-LEVEL EXCITATION RATE
C COEFFICIENTS EXPRESSED AS FRACTION OF
C CORRESPONDING N-LEVEL RATE.
C 1ST DIMENSION: J SUB-SHELL
C 1 => J=L+0.5
C 2 => J=L-0.5
C 2ND DIMENSION: REFERENCED BY I4IDFL(N,L)

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C PARAM : (I*4) MXN = 'MXNSHL'.
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C (I*4) N = N-SHELL INDEX.
C (I*4) L = L-SHELL INDEX.
C (I*4) J = J-SHELL INDEX.
C (I*4) IDL = L-RESOLVED INDEX.

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C (R*8) XL = REAL VALUE = L.
C (R*8) WL =

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C (R*8) TBQEX() = TABLE OF NL-LEVEL EXCITATION RATE
C COEFFICIENTS.
C UNITS:
C DIMENSION: REFERENCED BY I4IDFL(N,L).

C (R*8) FTHEX() = TABLE OF NL-LEVEL EXCITATION RATE

C COEFFICIENTS EXPRESSED AS FRACTION OF
C CORRESPONDING N-LEVEL RATE.
C DIMENSION: REFERENCED BY I4IDFL(N,L).
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C ROUTINES:

ROUTINE	SOURCE	BRIEF DESCRIPTION
I4UNIT	ADAS	RETURNS UNIT NO. FOR OUTPUT OF MESSAGES.
I4IDFL	ADAS	RETURNS UNIQUE INDEX GIVEN QUANTUM NUMBERS N AND L.
CXTBEX	ADAS	CALCULATES N-LEVEL AND NL-LEVEL EXCITATION RATE COEFFICIENTS. NL RATES ARE GIVEN AS FRACTION OF CORRESPONDING N RATE.

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C JET EXT. 5183
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C UNIX-IDL PORT:
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C MODIFIED: WILLIAM OSBORN
C - FIRST VERSION. IBM VERSION NOT CHANGED
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INTEGER IZ1, MXJSHL, MXNSHL, NBOT
INTEGER NGRND, NTOP
REAL*8 FTHEXJ(MXJSHL, (MXNSHL*(MXNSHL+1))/2)
REAL*8 QTHEX(MXNSHL), TEV