

## ADAS Subroutine xxecon

SUBROUTINE XXECON( INTYP, OUTTYP, IEVAL, EIN, EOUT )

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C
C ***** FORTRAN77 SUBROUTINE: XXECON *****
C
C PURPOSE: TO CONVERT AN ARRAY OF VELOCITIES/ENERGIES INTO A SPECIFIED
C          FORM.
C
C CALLING PROGRAM: GENERAL USE
C
C SUBROUTINE:
C
C INPUT :      (I*4)  INTYP   = 1 => 'EIN(array)' UNITS: AT. UNITS (VEL.)
C              = 2 => 'EIN(array)' UNITS: CM/SEC   (VEL.)
C              = 3 => 'EIN(array)' UNITS: EV/AMU   (ENERGY)
C INPUT :      (I*4)  OUTTYP  = 1 => 'EOUT(array)' UNITS: AT.UNITS (VEL.)
C              = 2 => 'EOUT(array)' UNITS: CM/SEC   (VEL.)
C              = 3 => 'EOUT(array)' UNITS: EV/AMU (ENERGY)
C INPUT :      (I*4)  IEVAL   = NO. OF VELOCITIES/ENERGIES IN EIN(array)
C INPUT :      (R*8)  EIN()   = INPUT  VELOCITIES/ENERGIES (STATED UNITS)
C OUTPUT:      (R*8)  EOUT()  = OUTPUT VELOCITIES/ENERGIES (STATED UNITS)
C
C              (R*8)  AMU2KG  = PARAMETER: AMU TO KG CONVERSION FACTOR
C              (R*8)  EV2J    = PARAMETER: EV TO JOULES CONVERSION FACTOR
C              (R*8)  M2CM    = PARAMETER: METRES TO CM CONVERSION FACTOR
C              (R*8)  VELE0H  = PARAMETER: ORBITAL VELOCITY (CM/SEC) OF
C                              AN ELECTRON IN THE SMALLEST ORBIT OF A
C                              HYDROGEN ATOM (BOHR) = 2.1877D+8 CM/SEC
C              (R*8)  AT2VEL  = AT.UNITS (VEL) TO CM/SEC (VEL) CONVERSION
C              (R*8)  VEL2AT  = CM/SEC (VEL) TO AT.UNITS (VEL) CONVERSION
C              (R*8)  VEL2EN  = CM/SEC (VEL) TO EV/AMU (ENGY.) CONVERSION
C              (R*8)  EN2VEL  = EV/AMU (ENGY.) TO CM/SEC (VEL) CONVERSION
C              (R*8)  AT2EN   = AT.UNITS (VEL) TO EV/AMU (ENG) CONVERSION
C              (R*8)  EN2AT   = EV/AMU (ENG) TO AT.UNITS (VEL) CONVERSION
C
C              (I*4)  I       = GENERAL USE
C
C              (R*8)  ECONV() = ENERGY/VELOCITY CONVERSION PARAMETERS
C
C ROUTINES:  NONE
C
C NOTE:
C          ENERGY/VELOCITY CONVERSION PARAMETERS:
C
C          INTYP = 1 ; ECONV(1) => VELOCITY: AT.UNITS -> OUTPUT FORM
C          INTYP = 2 ; ECONV(2) => VELOCITY: CM/SEC  -> OUTPUT FORM
C          INTYP = 3 ; ECONV(3) => ENERGY  : EV/AMU  -> OUTPUT FORM
C
C AUTHOR:  PAUL E. BRIDEN (TESSELLA SUPPORT SERVICES PLC)
C          K1/0/81
C          JET EXT. 4569
C
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C DATE: 05/02/91  
C  
C VERSION: 1.2 DATE: 01-05-96  
C MODIFIED: WILLIAM OSBORN  
C - CORRECTED AT2EN. IT WAS AT2VEL\*VEL2EN.  
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INTEGER	IEVAL,	INTYP,	OUTTYP
REAL*8	EIN(IEVAL),	EOUT(IEVAL)	