ADAS Subroutine xxceia

```
      SUBROUTINE XXCEIA( EIA )
C-----------------------------------------------------------------------
C
C  ****************** FORTRAN77 SUBROUTINE: XXCEIA ********************
C
C  PURPOSE: CONVERTS IONISATION POTENTIALS FROM WAVE NUMBERS TO
C           RYDBERGS AND FILLS IN ANY MISSING VALUES UP TO AN ION CHARGE
C           OF 50.
C
C           (IF 'EIA()' IS ALL ZERO - RETURN)
C           (PRIOR TO 16/08/90 WAS KNOWN AS 'E3EIA' - SLIGHTLY AMENDED)
C
C  CALLING PROGRAMS: GENERAL USE
C
C  SUBROUTINE:
C
C  I/O  : (R*8)  EIA()   = IONISATION POTENTIALS: ()=ION CHARGE
C  INPUT :                 UNITS - WAVE NUMBERS (CM-1)
C  OUTPUT:                 UNITS - RYDBERGS
C
C          (R*8) WN2RYD  = WAVE NUMBER (CM-1) TO RYDBERG CONVERSION
C
C          (I*4)  I4UNIT = FUNCTION (SEE ROUTINE SECTION BELOW)
C          (I*4)  IPOT   = NUMBER OF IONISATION POTENTIAL VALUES
C                          PRESENT IN THE INPUT FILE.
C          (I*4)  I      = GENERAL USE
C
C          (R*8)  A1     = EXTRAPOLATION EQUATION COEFFICIENT
C          (R*8)  A2     = EXTRAPOLATION EQUATION COEFFICIENT
C          (R*8)  A3     = EXTRAPOLATION EQUATION COEFFICIENT
C          (R*8)  XI     = VALUE AT WHICH EXTRAPOLATION IS REQUIRED
C
C ROUTINES:
C          ROUTINE    SOURCE   BRIEF DESCRIPTION
C          ------------------------------------------------------------
C          I4UNIT     ADAS     INTEGER*4 FUNCTION -
C                              FETCH UNIT NUMBER FOR OUTPUT OF MESSAGES
C
C NOTE:
C          THE NUMBER OF IONISATION COEFFICIENTS PRESENT WILL BE EITHER
C          30 OR 50. IF 30 THEN THE VALUES FROM  31  TO  50 NEED TO  BE
C          EXTRAPOLATED. THE EXTRAPOLATION EQUATION  IS  BASED  ON  THE
C          VALUES OF EIA(20), EIA(25) AND EIA(50).
C
C          THE EXTRAPOLATION EQUATION BEING:
C
C          EIA(XI) = A1 + A2*XI + A2*XI*XI
C
C ROUTINES: NONE
C
C AUTHOR:  PAUL E. BRIDEN (TESSELLA SUPPORT SERVICES PLC)
C          K1/0/81
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C          JET EXT. 4569
C
C DATE:    16/08/90
C
C UPDATE:  11/08/93  HP SUMMERS - DO NOT STOP IF IPOT.LE.30, BUT DO NOT
C                                 EXTRAPOLATE
C
C UNIX-IDL PORT:
C
C VERSION: 1.1                         DATE: 06-09-95
C MODIFIED: TIM HAMMOND (TESSELLA SUPPORT SERVICES PLC)
C              - FIRST RELEASE (NO CHANGES)
C
C VERSION: 1.2                         DATE: 20-07-07
C MODIFIED: Allan Whiteford
C              - Small modifications to comments to allow for
C                automatic documentation preparation.
C
C-----------------------------------------------------------------------
C-----------------------------------------------------------------------
      REAL*8          EIA(50)
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