ADAS Subroutine a3data

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      SUBROUTINE A3DATA( DSFULL , INDXREF , TITLE , CAMETH , Z0    , Z ,
     &                   Z1     , N0, V0, PHFRAC,
     &                   IXOPT, IBPOPT, IFSEL, IBPTS,
     &                   EDISPO, SCALEO,
     &                   NIA, LIA, NJA, LJA, NCUTA, WIA, WJA, EIJA,FIJA,
     &                   CORFIA,
     &                   XA, YA, XOA,
     &                   NGROUP, IGROUP, ICT, ICOUT,
     &                   IREAD
     &     )
C-----------------------------------------------------------------------
C
C  ******************** FORTRAN77 SUBROUTINE A3DATA ******************
C
C  PURPOSE: TO REFRESH A DATA INDEX FROM AN ADAS105 ARCHIVE. READS
C           IN THE INDEX CODE A-ADAS, B-BURGESS AND THE THE REST OF
C           THE DATA AS APPROPRIATE.
C
C  CALLING PROGRAM:
C            ADAS105.FOR
C
C  INPUT:
C            (C*80) DSFULL   - THE USERS' CHOSEN ARCHIVE FILE NAME.
C            (I*4)  INDXREF  - THE INDEX NUMBER TO REFRESH FROM.
C            (C*4)  CAMETH   - THE TAG TO DISTINGUISH BETWEEN THE
C                              TWO TYPES OF ANALYSIS.
C                              A - ADAS, B- BURGESS
C            (I*4)  IREAD  = THE INPUT UNIT
C
C  OUTPUTS:
C            (C*40) TITLE    - THE INFORMATION LINE IN THE ARCHIVE
C                              FILE.
C     (R*8)  Z0    NUCLEAR CHARGE
C     (R*8)  Z1    RECOMBINING ION CHARGE
C     (R*8)  Z     RECOMBINED ION CHARGE
C     (I*4)  N0     = LOWEST ACCESSIBLE PRINCIPLE QUANTUM NO.
C     (R*8)  V0     = LOWEST ACCESSIBLE EFF. PRINCIPLE QUANTUM NO.
C     (R*8)  PHFRAC = LOWEST ACCESSIBLE PHASE OCCUPATION FACTOR
C     (C*40) TITLE  = TITLE FOR RUN
C     (I*4)  ICT    = NUMBER OF TEMP./RATE PAIRS
C     (I*4)  ICOUT  = NUMBER OF OUTPUT TEMPS
C     (I*4)  IBPOPT = OPTIMISE BURGESS FORMULA FIT? 1=YES 0=NO
C     (I*4)  IXOPT  = OPTIMISE BURGESS PROGRAM FIT? 1=YES 0=NO
C     (I*4)  IFSEL  = 0=FIT TO FORMULA, 1=FIT TO INPUT DATA
C     (I*4)  IBPTS  = BAD POINT OPTION 1=ON 0=OFF
C     (I*4)  NIA(,) = NI VALUES FOR BOTH GROUPS
C     (I*4)  LIA(,) = LI VALUES FOR BOTH GROUPS
C     (I*4)  NJA(,) = NJ VALUES FOR BOTH GROUPS
C     (I*4)  LJA(,) = LJ VALUES FOR BOTH GROUPS
C     (I*4)  NCUTA(,)= NCUT VALUES FOR BOTH GROUPS
C     (R*8)  WIA(,) = WI VALUES FOR BOTH GROUPS
C     (R*8)  EIJA(,)= EIJ VALUES FOR BOTH GROUPS
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C     (R*8)  FIJA(,)= FIJ VALUES FOR BOTH GROUPS
C     (R*8)  CORFIA(,)=INITIAL CORFAC VALUES FOR BOTH GROUPS
C     (R*8)  XA()   = INPUT TEMPERATURE FROM ARCHIVE
C     (R*8)  YA()   = RATE FROM ARCHIVE
C     (R*8)  XOA()  = OUTPUT TEMPERATURE FROM ARCHIVE
C     (I*4)  NGROUP = NUMBER OF CORE TRANSITION GROUPS
C     (I*4)  IGROUP()=NUMBER OF ENTRIES FOR EACH GROUP
C
C  ROUTINES: NONE
C
C  AUTHOR:   WILLIAM OSBORN, TESSELLA SUPPORT SERVICES PLC., 6TH NOV 1996
C
C  VERSION 1.1                                          DATE: 06-11-96
C  MODIFIED: WILLIAM OSBORN
C - FIRST RELEASE
C
C-----------------------------------------------------------------------
      CHARACTER*4         CAMETH
      CHARACTER*80        DSFULL
      CHARACTER*40        TITLE
      INTEGER             IBPOPT,      IBPTS,       ICOUT,       ICT
      INTEGER             IFSEL,       IGROUP(2),   INDXREF,     IREAD
      INTEGER             IXOPT,       LIA(2,6),    LJA(2,6),    N0
      INTEGER             NCUTA(2,6),  NGROUP,      NIA(2,6)
      INTEGER             NJA(2,6)
      REAL*8              CORFIA(2,6), EDISPO(2),   EIJA(2,6)
      REAL*8              FIJA(2,6),   PHFRAC,      SCALEO(2),   V0
      REAL*8              WIA(2,6),    WJA(2,6),    XA(10),      XOA(10)
      REAL*8              YA(10),      Z,           Z0,          Z1
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