

## ADAS Subroutine cdata

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SUBROUTINE CCDATA( TERAY , NERAY , EBRAY , N1N , SRAY ,
& F1 , F2 , F3 , BN ,
& NN , IZ , INFILE , INUNIT ,
& MAXNE , MAXTE , MAXEB ,
& INCOUNT, ITCOUNT, IECOUNT, LEVEL ,
& EBREF , TEREf , NEREF ,
& INA , IEA , ITA , NLEVEL , FLAG )

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C
C ***** FORTRAN77 SUBROUTINE: CCDATA *****
C
C PURPOSE: TO FETCH DATA FROM BUNDLE-N POPULATION
C          FILES OF TYPE ADF26.
C
C CALLING PROGRAM: ADAS312
C
C SUBROUTINE:
C
C INPUT : (C*80) INFILE = MVS DATA SET NAME OF DATA SET BEING READ
C INPUT : (I*4)  INUNIT = UNIT TO WHICH INPUT FILE IS ALLOCATED.
C INPUT : (I*4)  MAXNE  = MAXIMUM NUMBER OF DENSITIES
C INPUT : (I*4)  MAXTE  = MAXIMUM NUMBER OF TEMPERATURES
C INPUT : (I*4)  MAXEB  = MAXIMUM NUMBER OF BEAM ENERGIES
C
C OUTPUT: (R*8)  TERAY() = TEMPERATURE SET (EV)
C                   1ST. DIM.: TEMPERATURE INDEX
C OUTPUT: (R*8)  NERAY() = DENSITY SET (CM-3)
C                   1ST. DIM.: DENSITY INDEX
C OUTPUT: (R*8)  EBRAY() = BEAM ENERGY SET (EV/AMU)
C                   1ST. DIM.: BEAM ENERGY INDEX
C OUTPUT: (R*8)  N1N(,,) = ???
C                   1ST. DIM.: BEAM ENERGY INDEX
C                   2ND. DIM.: DENSITY INDEX
C                   3RD. DIM.: TEMPERATURE INDEX
C OUTPUT: (R*8)  SRAY(,,) = COLL. RAD. IONIS COEFFT. (CM3 S-1)
C                   1ST. DIM.: BEAM ENERGY INDEX
C                   2ND. DIM.: DENSITY INDEX
C                   3RD. DIM.: TEMPERATURE INDEX
C OUTPUT: (R*8)  F1(,,,) = F1 EXPANSION FACTOR OF BN
C                   1ST. DIM.: BEAM ENERGY INDEX
C                   2ND. DIM.: DENSITY INDEX
C                   3RD. DIM.: TEMPERATURE INDEX
C                   4TH. DIM.: REPRES. PRINC. QUANTUM SHELL INDEX
C OUTPUT: (R*8)  F2(,,,) = F2 EXPANSION FACTOR OF BN
C                   1ST. DIM.: BEAM ENERGY INDEX
C                   2ND. DIM.: DENSITY INDEX
C                   3RD. DIM.: TEMPERATURE INDEX
C                   4TH. DIM.: REPRES. PRINC. QUANTUM SHELL INDEX
C OUTPUT: (R*8)  F3(,,,) = F3 EXPANSION FACTOR OF BN
C                   1ST. DIM.: BEAM ENERGY INDEX
C                   2ND. DIM.: DENSITY INDEX
C                   3RD. DIM.: TEMPERATURE INDEX

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C
C      4TH. DIM.: REPRES. PRINC. QUANTUM SHELL INDEX
C OUTPUT: (R*8)  BN(,,,) = BN FACTOR
C
C      1ST. DIM.: BEAM ENERGY INDEX
C      2ND. DIM.: DENSITY INDEX
C      3RD. DIM.: TEMPERATURE INDEX
C      4TH. DIM.: REPRES. PRINC. QUANTUM SHELL INDEX
C OUTPUT: (R*8)  NN(,,,) = POPULATION CONVERSION FACTOR
C
C      1ST. DIM.: BEAM ENERGY INDEX
C      2ND. DIM.: DENSITY INDEX
C      3RD. DIM.: TEMPERATURE INDEX
C      4TH. DIM.: REPRES. PRINC. QUANTUM SHELL INDEX
C OUTPUT: (I*4)  IZ      = IMPURITY ION CHARGE
C OUTPUT: (I*4)  INCOUNT = NUMBER OF DENSITIES
C OUTPUT: (I*4)  ITCOUNT = NUMBER OF TEMPERATURES
C OUTPUT: (I*4)  IECOUNT = NUMBER OF BEAM ENERGIES
C OUTPUT: (I*4)  LEVEL   = ??? APPEARS UNUSED ???
C OUTPUT: (R*8)  EBREF   = REFERENCE BEAM ENERGY (EV/AMU)
C OUTPUT: (R*8)  TEREf   = REFERENCE TEMPERATURE (EV)
C OUTPUT: (R*8)  NEREF   = REFERENCE DENSITY      (CM-3)
C OUTPUT: (I*4)  INA()   = NUMBER OF LEVELS
C
C      1ST. DIM.: DENSITY INDEX
C OUTPUT: (I*4)  ITA()   = NUMBER OF LEVELS
C
C      1ST. DIM.: TEMPERATURE INDEX
C OUTPUT: (I*4)  IEA()   = NUMBER OF LEVELS
C
C      1ST. DIM.: BEAM ENERGY INDEX
C OUTPUT: (I*4)  NLEVEL  = NUMBER OF LEVELS
C
C OUTPUT: (I*4)  FLAG()  = ARRAY INDICATING WHETHER DATA HAS BEEN
C      EXTRACTED FROM THE ADF26 TYPE FILE.
C
C      (I*4)  IT      = GENERAL INDEX
C      (I*4)  IN      = GENERAL INDEX
C      (I*4)  IE      = GENERAL INDEX
C      (R*8)  TE      = GENERAL REAL VARIABLE
C      (R*8)  NE      = GENERAL REAL VARIABLE
C      (R*8)  EB      = GENERAL REAL VARIABLE
C      (C*132)LINE    = GENERAL STRING
C      (C*2)  LEVELS() = PRINC. QU. SHELL STRINGS
C
C
C
C ROUTINES:
C      ROUTINE      SOURCE      BRIEF DESCRIPTION
C      -----
C      I4UNIT        ADAS        FETCH UNIT NUMBER FOR OUTPUT OF MESSAGES
C      CCFIND        ADAS        ???
C
C
C
C AUTHOR:  HARVEY ANDERSON, UNIVERSITY OF STRATHCLYDE/JET
C          JA8.08
C          TEL. 0141-553-4196
C
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C DATE:      16/05/97
C
C UNIX-IDL PORT: H.P.SUMMERS
C
C VERSION: 1.1 DATE: 10-07-97
C MODIFIED: HUGH SUMMERS, UNIVERSITY OF STRATHCLYDE
C   - PUT UNDER S.C.C.S. CONTROL
C
C VERSION: 1.2 DATE: 15-03-99
C MODIFIED: HARVEY ANDERSON, UNIVERSITY OF STRATHCLYDE
C   - INTRODUCED THE ARRAY FLAG, WHICH IS EMPLOYED TO
C     INDICATE THE DATA WHICH HAS BEEN EXTRACTED FROM
C     THE ADF26 TYPE FILE.
C
C VERSION: 1.3 DATE: 28-04-99
C MODIFIED: RICHARD MARTIN
C   ADDED MISSING CARRIAGE RETURN AFTER FORMAT STATEMENT 1006
C
C-----
CHARACTER*80      INFILE
INTEGER           FLAG (NLEVEL) ,                IEA (MAXEB) ,   IECOUNT
INTEGER           INA (MAXNE) ,   INCOUNT,        INUNIT
INTEGER           ITA (MAXTE) ,   ITCOUNT,        IZ,           LEVEL
INTEGER           MAXEB,          MAXNE,          MAXTE,          NLEVEL
REAL*8           BN (MAXEB, MAXNE, MAXTE, NLEVEL)
REAL*8           EBRAY (MAXEB) ,                EBREF
REAL*8           F1 (MAXEB, MAXNE, MAXTE, NLEVEL)
REAL*8           F2 (MAXEB, MAXNE, MAXTE, NLEVEL)
REAL*8           F3 (MAXEB, MAXNE, MAXTE, NLEVEL)
REAL*8           N1N (MAXEB, MAXNE, MAXTE) ,     NERAY (MAXNE)
REAL*8           NEREF,          NN (MAXEB, MAXNE, MAXTE, NLEVEL)
REAL*8           SRAY (MAXEB, MAXNE, MAXTE) ,    TERAY (MAXTE)
REAL*8           TEREf

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