

## ADAS Subroutine d5data

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      SUBROUTINE D5DATA( DSFLLA , LSELA , LEXSA , LDEFA , LPART ,
&                      IZ0      , IZ1MIN , IZ1MAX , NPART  ,
&                      NTDIM   , ITMAX  ,
&                      ISDIMD  , IZDIMD , ITDIMD , IPDIMD , NPARTR,
&                      DTEV    , DDENS  ,
&                      DTEVD   , DDENSD , DRCOFD , ZDATA  ,
&                      DRCOFI  ,
&                      ACDA    , LACDA  ,
&                      SCDA    , LSCDA  ,
&                      CCDA    , LCCDA  ,
&                      PRBA    , LPRBA  ,
&                      PRCA    , LPRCA  ,
&                      QCDA    , LQCDA  ,
&                      XCDA    , LXCDA  ,
&                      PLTA    , LPLTA  ,
&                      )
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C

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C

C \*\*\*\*\* FORTRAN77 SUBROUTINE: D5DATA \*\*\*\*\*

C

C PURPOSE : TO EXTRACT A COMPLETE SET OF COLLISIONAL DIELECTRONIC DATA  
C FOR A TEMP/DENSITY MODEL  
C FROM EITHER PARTIAL (METASTABLE/PARENT RESOLVED) OR STANDARD  
C (UNRESOLVED) ISONUCLEAR MASTER FILES

C

C NOTE : THE SOURCE DATA IS CONTAINED AS SEQUENTIAL DATASETS  
C WITH THE FOLLOWING NAMING CONVENTIONS:

C

- C (1) JETSHP.ACD<YR>#<EL>.<CODE>DATA
- C (2) JETSHP.SCD<YR>#<EL>.<CODE>DATA
- C (3) JETSHP.CCD<YR>#<EL>.<CODE>DATA
- C (4) JETSHP.PRB<YR>#<EL>.<FILT>.<CODE>DATA
- C (5) JETSHP.PRC<YR>#<EL>.<FILT>.<CODE>DATA
- C (6) JETSHP.QCD<YR>#<EL>.<CODE>DATA
- C (7) JETSHP.XCD<YR>#<EL>.<CODE>DATA
- C (8) JETSHP.PLT<YR>#<EL>.<CODE>DATA

C

C WHERE, <YR> = TWO DIGIT YEAR NUMBER  
C <EL> = ONE OR TWO CHARACTER ELEMENT SYMBOL  
C <CODE> = R => PARTIAL DATA  
C U => PARTIAL DATA  
C OMITTED => STANDARD DATA  
C <FILT> = SIX CHARACTER POWER FILTER CODE

C

C AND DATA OF CLASSES 6 AND 7 DO NOT EXIST FOR THE STANDARD CASE.

C

C

C INPUT : (C\*120)DSFLLA() = MASTER FILE DATA SET NAMES (FULL MVS DSN)  
C (IN FORM SUITABLE FOR DYNAMIC ALLOCATION)  
C INPUT : (L\*4) LSELA() = .TRUE. => INPUT DATA SET TYPE FOR THIS  
C INDEX SELECTED





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C          2ND DIM: CHARGE STATE INDEX
C          3RD DIM: FIRST PARENT METASTABLE INDEX
C          4TH DIM: SECOND PARENT METASTABLE INDEX
C OUTPUT : (L*4)  LXCDA(,,) = .TRUE.  => XCD COEFFICIENT AVAILABLE
C          .FALSE. => XDC COEFFICIENT NOT AVAILABLE
C          1ST DIM: CHARGE STATE INDEX
C          2ND DIM: FIRST PARENT METASTABLE INDEX
C          3RD DIM: SECOND PARENT METASTABLE INDEX
C OUTPUT : (R*8)  PLTA(,,)  = INTERPOLATION OF PLT COEFFICIENT (W CM3 )
C          1ST DIM: TEMPERATURE INDEX
C          2ND DIM: CHARGE STATE INDEX
C          3RD DIM: METASTABLE INDEX
C OUTPUT : (L*4)  LPLTA(,)  = .TRUE.  => PLT COEFFICIENT AVAILABLE
C          .FALSE. => PLT COEFFICIENT NOT AVAILABLE
C          1ST DIM: CHARGE STATE INDEX
C          2ND DIM:  METASTABLE INDEX
C
C PROGRAM: (I*4)  IT          = GENERAL INDEX FOR TEMPERATURE
C          (I*4)  IZ          = GENERAL INDEX FOR CHARGE
C          (I*4)  IZ1        = GENERAL INDEX FOR CHARGE+1
C          (I*4)  IPRT       = GENERAL INDEX FOR PARENT METASTABLE
C          (I*4)  JPRT       = GENERAL INDEX FOR PARENT METASTABLE
C          (I*4)  IGRD       = GENERAL INDEX FOR METASTABLE
C          (I*4)  JGRD       = GENERAL INDEX FOR METASTABLE
C
C
C ROUTINES:
C          ROUTINE      SOURCE      BRIEF DESCRIPTION
C          -----
C
C AUTHOR : H. P. SUMMERS, JET
C          K1/1/57
C          JET EXT. 4941
C
C DATE   : 25/04/94
C
C IDL-UNIX PORT:
C VERSION: 1.1 DATE: 31/10/95
C MODIFIED: TIM HAMMOND
C          - INITIAL VERSION TO BE USED FOR UNIX PLATFORMS
C
C VERSION: 1.2 DATE: 08/11/95
C MODIFIED: TIM HAMMOND
C          - ALTERED ALL DECISIONS 'IF (LEXSA(I))' WHICH OPENED ANY
C            CLASS OF FILE WHICH EXISTED EVEN IF IT HAD NOT BEEN
C            SELECTED TO 'IF (LEXSA(I).AND.LSELA(I))' SO THAT EVEN
C            IF A PARTICULAR FILE EXISTS IT IS ONLY OPENED AND READ
C            IF IT HAS BEEN REQUESTED.
C          - TIDIED UP COMMENTS AND CODE.
C
C VERSION: 1.3 DATE: 08/11/95
C MODIFIED: TIM HAMMOND

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C          - REMOVED SUPERFLUOUS VARIABLES
C
C VERSION: 1.4 DATE:    09/11/95
C MODIFIED: TIM HAMMOND
C          - CHANGED LOOP:  2 IT = 1,ITDIMD
C                      TO:  2 IT = 1,NTDIM
C          AS IT WAS SUBSCRIBTING ARRAYS ACDA ETC. OUT OF
C          RANGE
C
C VERSION: 1.5 DATE:    13/11/95
C MODIFIED: TIM HAMMOND
C          - CHANGED DECISION STATEMENTS AGAIN (SEE 1.2) SO THEY
C          NOW READ: ' IF ((LEXSA(I).OR.LDEFA(I)).AND.LSELA(I)) '
C          AS BEFORE THE CODE WAS IGNORING THE CASE WHERE THE
C          DEFAULT FILE EXISTED AND THE USER HAD ASKED FOR THIS
C          DATA TO BE INCLUDED. IT IS NOT NECESSARY TO SPECIFY
C          DIFFERENT FILENAMES FOR DEFAULT AND USER DATA AS THE
C          ARRAY USED CONTAINS THE DEFAULT FILENAME WHEREVER
C          THE USER FILE DOES NOT EXIST. SEE d5spf0.pro FOR
C          MORE DETAILS OF THIS.

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CHARACTER*120      DSFLLA(8)
INTEGER            IPDIMD,      ISDIMD,      ITDIMD,      ITMAX
INTEGER            IZ0,        IZ1MAX,      IZ1MIN,      IZDIMD
INTEGER            NPART(IZDIMD),      NPARTR(IZDIMD)
INTEGER            NTDIM
LOGICAL            LACDA(IZDIMD,IPDIMD,IPDIMD)
LOGICAL            LCCDA(IZDIMD,IPDIMD,IPDIMD)
LOGICAL            LDEFA(8),    LEXSA(8),    LPART
LOGICAL            LPLTA(IZDIMD,IPDIMD),    LPRBA(IZDIMD,IPDIMD)
LOGICAL            LPRCA(IZDIMD,IPDIMD)
LOGICAL            LQCD(IZDIMD,IPDIMD,IPDIMD)
LOGICAL            LSCDA(IZDIMD,IPDIMD,IPDIMD)
LOGICAL            LSELA(8),    LXCDA(IZDIMD,IPDIMD,IPDIMD)
REAL*8            ACDA(NTDIM,IZDIMD,IPDIMD,IPDIMD)
REAL*8            CCDA(NTDIM,IZDIMD,IPDIMD,IPDIMD)
REAL*8            DDENS(ITMAX),      DDENSD(ITDIMD)
REAL*8            DRCOFD(ISDIMD,ITDIMD,ITDIMD)
REAL*8            DRCOFI(ITMAX),      DTEV(ITMAX)
REAL*8            DTEVD(ITDIMD)
REAL*8            PLTA(NTDIM,IZDIMD,IPDIMD)
REAL*8            PRBA(NTDIM,IZDIMD,IPDIMD)
REAL*8            PRCA(NTDIM,IZDIMD,IPDIMD)
REAL*8            QCDA(NTDIM,IZDIMD,IPDIMD,IPDIMD)
REAL*8            SCDA(NTDIM,IZDIMD,IPDIMD,IPDIMD)
REAL*8            XCDA(NTDIM,IZDIMD,IPDIMD,IPDIMD)
REAL*8            ZDATA(ISDIMD)

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