ADAS Subroutine xxrptn

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      subroutine  xxrptn( iunit  , ndstack,
     &                    ndptnl , ndptn  , ndptnc ,
     &                    nptnl  , nptn   , nptnc  ,
     &                    iptnla , iptna  , iptnca ,
     &                    lresol , lptn   ,
     &                    cstrg  ,
     &                    ncptn_stack     , cptn_stack
     &                  )
c-----------------------------------------------------------------------
c
c  ****************** fortran77 subroutine: xxprtn ********************
c
c  Purpose:  To read and analyse a partition block in a datafile header
c
c  Calling program: adas416
c
c  Notes:   (1) Partition levels, partitions and partition components are
c               labelled starting at 0 (but see (2)).
c           (2) Partition level 0 labels the resolved root partition level
c               partition level 1 labels the unresolved root partition
c               level.
c           (3) For an unresolved (standard) file, the partitions are each
c               ionisation stage from the neutral to the bare nucleus and
c               they are labelled by the ion charge.  Each partition has
c               just the one component.
c           (4) Distinguish the indexing (starting at 1) from the label
c               (starting at 0) .
c
c  Subroutine:
c
c  input : (i*4)  iunit      = unit to which input file is allocated
c  input : (i*4)  ndstack    = maximum no. of text lines in partition block
c
c  input : (i*4)  ndptnl     = maximum level of partitions
c  input : (i*4)  ndptn      = maximum no. of partitions in one level
c  input : (i*4)  ndptnc     = maximum no. of components in a partition
c  input : (l*4)  lresol     = .true.  => resolved root partition
c                            = .false. => standard root partition
c
c  output: (i*4)  nptnl      = number of partition levels in block
c  output: (i*4)  nptn()     = number of partitions in partition level
c                                1st dim: partition level
c  output: (i*4)  nptnc(,)   = number of components in partition
c                                1st dim: partition level
c                                2nd dim: member partition in partition level
c  output: (i*4)  iptnla()   = partition level label (0=resolved root,1=
c                                                     unresolved root)
c                                1st dim: partition level index
c  output: (i*4)  iptna(,)   = partition member label (labelling starts at 0)
c                                1st dim: partition level index
c                                2nd dim: member partition index in partition
c                                level
```

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c  output: (i*4)  iptnca(,,)= component label (labelling starts at 0)
c                              1st dim: partition level index
c                              2nd dim: member partition index in partition
c                              level
c                              3rd dim: component index of member partition
c  output: (l*4)  lptn     = .true.  => partition block present
c                          = .false. => partition block not present
c  output: (c*80) cstrg    = string marking end of partition block
c  output: (i*4)  ncptn_stack= number of text lines in partition block
c  output: (c*80) cptn_stack()=text lines of partition block
c                              1st dim: text line pointer
c
c
c Routines:
c      Routine     Source Brief description
c      -------------------------------------------------------------
c      I4UNIT      ADAS Fetch unit number for output of messages
c      XXSLEN      ADAS Find non-blank characters in string
c      XXWORD      ADAS Extract position of number in buffer
c
c Author:  H. P. Summers, university of strathclyde
c          JA7.08
c          tel. 0141-548-4196
c
c Date:    25/08/05
c
c Version: 1.1   Date: 25/08/2005
c Modified: Hugh Summers
c   - First edition.
c
c Version: 1.2   Date: 28/02/2008
c Modified: Adam Foster
c   - Increased length of strg to 1024
c
c Version: 1.3   Date: 28/02/2008
c Modified: Allan Whiteford
c - Added comments for Adam's change
c            - Fixed capitalisation of comments section.
c
c----------------------------------------------------------------------
c----------------------------------------------------------------------
      CHARACTER*80       CPTN_STACK(NDSTACK),      CSTRG
      INTEGER            IPTNA(NDPTNL,NDPTN)
      INTEGER            IPTNCA(NDPTNL,NDPTN,NDPTNC)
      INTEGER            IPTNLA(NDPTNL),           IUNIT
      INTEGER            NCPTN_STACK, NDPTN,       NDPTNC,       NDPTNL
      INTEGER            NDSTACK,     NPTN(NDPTNL)
      INTEGER            NPTNC(NDPTNL,NDPTN),      NPTNL
      LOGICAL            LPTN,        LRESOL
```