

## ADAS Subroutine bapars

SUBROUTINE BAPARS (NDMET, STRING, NPT, BWNOA, LSETA,  
& PRTWTA, CPRTA, IFAIL)

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C \*\*\*\*\* FORTRAN77 SUBROUTINE: BAPARS \*\*\*\*\*

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C PURPOSE: TO ANALYSE THE TAIL CHARACTER STRING OF THE FIRST LINE OF  
C A SPECIFIC ION FILE INTO BINDING WAVE NUMBERS FOR DIFFERENT  
C PARENTS AND STATISTICAL WEIGHTS FOR THE PARENTS.  
C MODIFICATION OF B8PARS.

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C CALLING PROGRAM: ADAS210

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C NOTES: DETECT - BINDING WAVE NUMBER WHICH PRECEED TERM ASSIGNATION  
C - TERM CONTAINED IN '(.)'.

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C SUBROUTINE:

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C INPUT : (I\*4) NDMET = MAXIMUM NUMBER OF METASTABLES ALLOWED

C INPUT : (C\*(\*))STRING = STRING TO BE PARSED

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C OUTPUT: (I\*4) NPT = NUMBER OF BINDING WAVE NUMBERS DETECTED

C OUTPUT: (L\*4) LSETA() = .TRUE. - PARENT TERM SET FOR THIS W.NO.

C .FALSE. - PARENT TERM NOT SET FOR W.NO.

C OUTPUT: (L\*4) LFND = .TRUE. - L QUANTUM NUMBER PRESENT IN  
C STRING

C .FALSE. - NO L QUANTUM NUMBER DETECTED

C OUTPUT: (R\*8) BWNOA() = BINDING WAVE NUMBERS

C OUTPUT: (R\*8) PRTWTA() = PARENT STATISTICAL WEIGHTS

C OUTPUT: (C\*9) CPRTA() = PARENT NAME IN BRACKETS

C OUTPUT: (I\*4) IFAIL = 0 - SUBROUTINE CONCLUDES CORRECTLY

C 1 - FAULT DETECTED IN SUBROUTINE

C 2 - SINGLE IONISATION POTENTIAL DETECTED

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C (I\*4) MAXWRD = MAXIMUM NUMBER OF WORDS SOUGHT INITIALLY  
C INITIALLY, FINALLY NUMBER ACTUALLY FOUND

C (I\*4) NFIRST = FIRST WORD TO BE EXTRACTED FROM STRING

C (I\*4) IFIRST() = INDEX OF FIRST CHAR. OF WORD () IN STRING

C (I\*4) ILAST() = INDEX OF LAST CHAR. OF WORD () IN STRING

C (I\*4) IWORDS = NUMBER OF WORDS FOUND IN STRING

C (I\*4) IABT = FAILURE NUMBER FROM R8FCTN

C (I\*4) NCHAR = NUMBER OF CHARACTERS IN SUBSTRING

C (I\*4) I = GENERAL USE

C (I\*4) J = GENERAL USE

C (I\*4) K = GENERAL USE

C (I\*4) IC = GENERAL USE

C (I\*4) ITYPE = RESOLUTION OF PARENT METASTABLES

C 1 - LS RESOLVED

C 2 - LSJ RESOLVED

C 3 - ARBITRARY RESOLUTION

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C (I\*4) ITP = FLAG FOR INCOMPATIBLE TYPES  
 C (I\*4) ITYP = COPY OF CURRENT ITYPE  
 C (I\*4) KMRK = POSITION MARKER IN THE STRING FOR PARENT  
 C L QUANTUM NUMBER  
 C (R\*8) TWTA() = (2L+1) VALUE FOR PARENT L QUANTUM NUMBER  
 C (C\*1) CTRMA() = PARENT L QUANTUM NUMBER LETTER SET  
 C

C ROUTINES:

ROUTINE	SOURCE	BRIEF DESCRIPTION
I4UNIT	ADAS	FETCH UNIT NUMBER FOR OUTPUT OF MESSAGES
R8FCTN	ADAS	CONVERTS FROM CHARACTER TO REAL VARIABLE
I4FCTN	ADAS	CONVERTS FROM CHAR. TO INTEGER VARIABLE
XXWORD	ADAS	PARSES A STRING INTO SEPARATE WORDS FOR ' ()<>{}' DELIMITERS

C AUTHOR: HP SUMMERS  
 C K1/1/57  
 C JET EXT. 4941  
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C DATE: 22/06/92

C UPDATE: 8/07/93 - HPS ALTERED TO USE XXWORD PARSING ROUTINE

C UPDATE: 11/05/95 - HPS ADD CPRTA TO PARAMETER LIST

C UPDATE: 13/11/95 - DHB EXTENDED ROUTINE TO HANDLE J/ARBITRARY  
 C RESOLVED PARENT METASTABLE INFORMATION  
 C IN THE FIRST DATA CARD STRING. INTRODUCED  
 C ITYPE TO FLAG RESOLUTION IF REQUIRED.  
 C

C UPDATE: 21/12/95 - DHB INCREASED SIZE OF IFIRST & ILAST TO 12 IN  
 C LINE WITH INCREASE TO NDMET  
 C

C UNIX-IDL PORT:

C VERSION: 1.1 DATE: 22-1-96  
 C MODIFIED: TIM HAMMOND (TESSELLA SUPPORT SERVICES PLC)  
 C - PUT UNDER SCCS CONTROL  
 C

C VERSION: 1.2 DATE: 28-1-96  
 C MODIFIED: HPS + WILLIAM OSBORN (TESSELLA SUPPORT SERVICES PLC)  
 C - PUT IN DEFAULT FOR NO PARENTS IN FILE.  
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CHARACTER*9	CPRTA (NDMET)		
CHARACTER*(*)	STRING		
INTEGER	IFAIL,	NDMET,	NPT
LOGICAL	LSETA (NDMET)		
REAL*8	BWNOA (NDMET),		PRTWTA (NDMET)