

## ADAS Subroutine b2ngas

SUBROUTINE B2NGAS (X,DX,FORM,IFORMS,IENDS)

C

IMPLICIT REAL\*8 (A-H,O-Z)

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C

C \*\*\*\*\* FORTRAN77 SUBROUTINE: B2NGAS \*\*\*\*\*

C

C PURPOSE:

C SUBROUTINE INITIALISES COMMON ARRAYS REQUIRED FOR SPLINING WITH  
C SMOOTH FITTING TO AN ASYMPTOTIC FORM

C

C

C USES LABELLED COMMON /SPL3/

C

C IF IENDS=1, MATCHING IS AT FIRST KNOT (GIVEN BY X)

C       =2, MATCHING IS AT LAST KNOT (GIVEN BY X)

C ASYMPTOTIC FORMS ARE GIVEN IN THE EXTERNAL FUNCTION FORM(I,X)

C WHERE I=4\*IFORMS-5+2\*IENDS POINTS TO FIRST PART OF ASYMP. FORM

C       =4\*IFORMS-4+2\*IENDS POINTS TO SECOND PART OF ASYMP. FORM

C THUS A SERIES OF ASYMPTOTIC FORMS MAY BE PRESENT IN FORM

C

C INPUT

C       COMMON /SPL3/ PROVIDES INPUT IN VECTOR IEND WHICH SPECIFIES

C                       CHOICE OF END CONDITION AT FIRST IEND(1) OR LAST

C                       IEND(2) KNOT OF SPLINE

C       X=X-VALUE OF END POINT

C       DX=DISPLACEMENT FROM X-VALUE FOR DERIVATIVE EVALUATION

C       FORM=EXTERNAL FUNCTION SPECIFYING ASYMPTOTIC FORMS

C       IFORMS=SELECTED FORM

C       IENDS=1, MATCHING IS AT FIRST KNOT (GIVEN BY X)

C       =2, MATCHING IS AT LAST KNOT (GIVEN BY X)

C OUTPUT

C       COMMON /SPL3/ IS SET BY THIS ROUTINE

C

C NOTES: THIS ROUTINE IS NOT YET PROPERLY ANNOTATED

C

C UNIX-IDL PORT:

C

C VERSION: 1.1                                       DATE: 06-03-96

C MODIFIED: TIM HAMMOND (TESSELLA SUPPORT SERVICES PLC)

C                       - PUT UNDER S.C.C.S. CONTROL

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COMMON /SPL3/IEND(2),G(2),AB(4),PQ(12),ABRY(40)

IF (IENDS.EQ.1.AND.IEND(1).EQ.4) GO TO 5

IF (IENDS.EQ.2.AND.IEND(2).EQ.4) GO TO 5

3 RETURN

5 I=4\*IFORMS-5+2\*IENDS

J=6\*IENDS-5

IC=0

DX1=1.0D0/DX

```
10 PQ(J)=FORM(I,X)
   T1=FORM(I,X+DX)
   T2=FORM(I,X-DX)
   PQ(J+1)=0.5D0*DX1*(T1-T2)
   PQ(J+2)=DX1*DX1*(T1-2.0D0*PQ(J)+T2)
   IC=IC+1
   IF(IC.GT.1)RETURN
   I=I+1
   J=J+3
   GO TO 10
END
INTEGER          IENDS,      IFORMS
REAL*8           DX,        X
```