

ADAS Subroutine bbspln

```
      subroutine bbspln( ndtem   , ntmax   ,  
      &                  nblock  , maxt   ,  
      &                  tin     , tout   ,  
      &                  rrcin   , rrcout  
      &                  )
```

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C  
C ***** fortran77 subroutine: bbspln *****  
C  
C purpose:  
C 1) performs cubic spline on log(temp) versus log(rad.rec.coeff.)  
C    input data. ('tin' versus 'rrcin' , nblock data pairs)  
C  
C 2) interpolates 'maxt' rrcout values using above splines at  
C    temperatures read in from adf08 file for tabular output.  
  
C  
C calling program: adas211  
C  
C  
C subroutine:  
C  
C input : (i*4) ndtem   = maximum number of adf08 temperatures  
C input : (i*4) ntmax   = maximum number of adf37 temperatures  
C input : (i*4) nblock  = input data file: number of rrc/temperature  
C    pairs read for the transition being assessed  
C input : (i*4) maxt    = number of adf08 temperature values at  
C    which interpolated rrc values are required  
C    for tabular output.  
C input : (r*8) tin()   = adf37 temperatures (kelvin)  
C input : (r*8) tout()  = adf08 entered temperatures (kelvin)  
C input : (r*8) rrcin() = rrc values at 'tin()'.  
C  
C output: (r*8) rrcout()= spline interpolated rrc values at 'tout()'  
C  
C local : (i*4) nin     = parameter = max. no. of input temp/rrc pairs  
C    must be >= 'nv'  
C local : (i*4) nout    = parameter = max. no. of output temp/rrc pairs  
C    must be >= 'maxt' & 'npspl'  
C local : (i*4) iarr    = array subscript used for temp/rrc pairs  
C local : (i*4) iopt    = defines the boundary derivatives for the  
C    spline routine 'xxspln', see 'xxspln'.  
C    (valid values = <0, 0, 1, 2, 3, 4).  
C local : (l*4) lsetx   = .true. => set up spline parameters relating  
C    to 'xin' axis.  
C    .false. => do not set up spline parameters  
C    relating to 'xin' axis.  
C    (they were set in a previous call)  
C    (value set to .false. by 'xxspln')  
C local : (r*8) xin()   = log( 'tin()' )  
C local : (r*8) yin()   = log( 'rrcin()' )
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C local : (r*8)  xout()  = log(temperatures at which splines required)
C local : (r*8)  yout()  = log(output spline interpolated rrc values)
C local : (r*8)  df()    = spline interpolated derivatives
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C routines:
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C   routine      source brief description
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C   -----
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C   xxspln      adas spline subroutine
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C   r8fun1      adas real*8 function: ( x -> x )
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C author: Paul Bryans (University of Strathclyde)
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C date: 01/12/04
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INTEGER          MAXT,          NBLOCK,          NDTEM,          NTMAX
REAL*8           RRCIN (NTMAX) ,          RRCOUT (NDTEM)
REAL*8           TIN (NTMAX) ,          TOUT (NDTEM)
```