

ADAS Subroutine a8amax

```
subroutine a8amax( ixtyp , ibpts , idiff ,
&                s      , eij   , wi    , wj    ,
&                bxc   , bpxc  , fxc1  ,
&                fxc2  , fxc3  , xkc   ,
&                ict   , xsa   , ysa   ,
&                itout , toa   , goa   , apgoa , excra ,
&                dexcra, gbarfa
&                )
```

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C-----
C
C ***** fortran77 subroutine a8amax *****
C
C purpose: to perform Maxwellian averages of collision strengths for
C          adas interpolative fit to neutrals
C
C calling program:  adas108.for
C
C input:
C      (i*4)  ixtyp    = type of transition (1=dipole,2=non-dipole
C                    non-spin change, 3=spin change, 4=null)
C      (i*4)  ibpts    = bad point switch (0=normal, 1=bad.pt)
C      (i*4)  idiff    = difference switch (0=ratio, 1=diff)
C      (r*8)  s        = line strength for dipole case
C      (r*8)  eij      = transition energy (rydberg)
C      (r*8)  wi       = lower level statistical weight
C      (r*8)  wj       = upper level statistical weight
C      (r*8)  bxc      = threshold form parameter
C      (r*8)  bpxc     = matching parameter
C      (r*8)  fxc1     = threshold form parameter
C      (r*8)  fxc2     = asymptotic form parameter
C      (r*8)  fxc3     = asymptotic form parameter
C      (i*4)  ict      = length of xsa and ysa value set
C      (r*8)  xsa()    = independent (energy) coord. for spline
C      (r*8)  ysa()    = dependent (coll. str.) coord. for spline
C
C output:
C      (i*4)  itout    = length of toa, goa value set
C      (r*8)  toa()    = output temperatures (K)
C      (r*8)  goa()    = output upsilons
C      (r*8)  apgoa()  = output approximate form upsilons
C      (r*8)  excra()  = output excitation rate coefficients
C      (r*8)  dexcra() = output de-excitation rate coefficients
C      (r*8)  gbarfa() = output gbar*f coefficients
C
C
C routines:
C      egasym adas generates asyptotic spline conditions
C      egspc  adas  generates spline coefficients
C      elnfit adas  obtains linearly interpolated value
C      efasym adas  obtains spline interpolated value
C      a8gamg adas  calculates incomplete gamma function
C      eei    adas  exponential integral exp(x)*e1(x)
C      ee2    adas  exponential integral exp(x)*e2(x)
```

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C
c author: Hugh Summers, University of Strathclyde ext.4196
c
c
c version 1.1 date: 25/06/99
c modified: Hugh Summers
c - first release
C
C DATE: 07/07/2004 VERSION: 1.2
C MODIFIED: ALLAN WHITEFORD
C - CHANGED PARAMS108 TO PARAMS
C
```

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C-----
      include 'PARAMS'
```

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C-----
      INTEGER          IBPTS,          ICT,          IDIFF,          ITOUT
      INTEGER          IXTYP
      REAL*8           APGOA(ISTDIM),          BPXC,          BXC
      REAL*8           DEXCRA(ISTDIM),          EIJ
      REAL*8           EXCRA(ISTDIM),          FXC1,          FXC2
      REAL*8           FXC3,          GBARFA(ISTDIM)
      REAL*8           GOA(ISTDIM), S,          TOA(ISTDIM), WI
      REAL*8           WJ,          XKC,          XSA(ISTDIM)
      REAL*8           YSA(ISTDIM)
```