ADAS Subroutine d8vgol

```
      subroutine d8vgol(tea, ga, ga0, garest, z1, n0, v0, phfrac)


C-----------------------------------------------------------------------
C
C  ****************** FORTRAN77 SUBROUTINE: D8VGOL *********************
C
C  PURPOSE:    Routine to evaluate total radiative recombination rate
C              coefficients at zero density using the Von Goeler type
C              formula with modified capture to the lowest accessible
C              principal quantum shell.
C
C              PHFRAC gives the proportion of the lowest level capture
C              allowed based on the available phase space of occupied
C              shells arguments.
C
C  CALLING PROGRAM: ADAS408
C
C
C  INPUT:  (R*8)  TEA         = Electron temperatures (k)
C          (R*8)  z1          = Recombining ion charge
C          (I*4)  n0          = Lowest accessible n-shell by recombination
C          (R*8)  v0          = Effective principal quantum number of
C                               lowest accessible shell
C          (R*8)  phfrac      = Phase space occupation factor for lowest
C                               accessible shell
C
C
C  OUTPUT: (R*8)  ga          = Total radiative recombination
C                               coefficient (cm**3 sec-1)
C          (R*8)  ga0         = Ground shell  recombination coefficient
C          (R*8)  garest      = Recombination coefficient to all shells
C                               excluding the ground shell.
C
C
C  ROUTINES:
C          ROUTINE   SOURCE     DESCRIPTION
C          ---------------------------------------------------------
C
C
C  HISTORY:
C
C  H.P. Summers, JET       24 June 1987
C  M. O'Mullane            10 Aug  1992 - modified for one temperature
C
C
C-----------------------------------------------------------------------
C UNIX-IDL PORT:
C
C VERSION: 1.1                          DATE: 15-04-96
C MODIFIED: WILLIAM OSBORN (TESSELLA SUPPORT SERVICES PLC)
C               - FIRST CONVERTED
```

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C
C VERSION: 1.2 DATE: 16-02-2004
C MODIFIED: Martin O'Mullane
C            - Convert to implicit none.
C
C VERSION: 1.3 DATE: 17-05-2007
C MODIFIED: Allan Whiteford
C            - Updated comments as part of subroutine documentation
C              procedure.
C
C-----------------------------------------------------------------------
      INTEGER             N0
      REAL*8              GA,          GA0,         GAREST,      PHFRAC
      REAL*8              TEA,         V0,          Z1
```