ADAS Subroutine r2photo

```
      SUBROUTINE R2PHOTO(ATE,EN,RREC,QRREC)
      IMPLICIT REAL*8(A-H,O-Z)
C-------------------------------------------------------------------
C  ********  FORTRAN 77 SUBROUTINE  ******************
C
C           NAME:  R2PHOTO
C
C        VERSION:  2.0
C
C  PREVIOUS NAMES:  JETSHP.NMAINCH(RPHOTO)   (H.P. SUMMERS)
C
C         AUTHOR:  H.P. SUMMERS/ W.J. DICKSON
C
C           DATE:  19/10/93
C
C    PURPOSE:
C    --------
C    UPDATED VERSION OF RPHOTO TO ALLOW
C
C      (I)  RETURN OF ENERGY AVERAGED ELECTRON COOLING COEFFICIENT
C
C
C    INPUT:
C    ------
C    ATE         R*8      EQUAL TO  (157890.0 /TE) *Z*Z
C    EN          R*8      N SHELL
C
C
C    OUTPUT:
C    -------
C    RREC        R*8      ENERGY AVERAGED BOUND-FREE GAUNT FACTOR
C                           (= INT FROM 0 TO INFINITY OF GII*EXP(-X) DX)
C    QRREC       R*8      ENERGY AVERAGED BOUND-FREE GAUNT FACTOR FOR
C                         CALCULATION OF ELECTRON COOLING FUNCTION.
C                          ( = RREC REDUCED BY FACTOR OF E/HV,
C                                 WHERE E  = ELECTRON ENERGY
C                                       HV = PHOTON ENERGY )
C
C   NOTES:
C   ------
C    TE IS IN KELVIN UNITS
C    X = E/KT
C
C-------------------------------------------------------------------
C
C UNIX-IDL CONVERSION:
C
C VERSION: 1.1                          DATE: 22-08-96
C MODIFIED: WILLIAM OSBORN
C                - FIRST CONVERTED. NO CHANGES.
C
C-------------------------------------------------------------------
```

```
C----------------------------------------------------------------------
C
      REAL*8             ATE,          EN,          QRREC,       RREC
```