ADAS Subroutine pyvr

```
       SUBROUTINE PYVR(Y,Z1,PY)
C
       IMPLICIT REAL*8(A-H,O-Z)
C
C-----------------------------------------------------------------------
C
C  ****************** FORTRAN77 SUBROUTINE: PYVR ***********************
C
C  PURPOSE: CALCULATES VAN REGEMORTER'S P FACTOR FOR ELECTRON
C           COLLISIONS WITH ATOMS AND IONS.
C
C  INPUT
C      Y=ATE*(1/V1**2+1/V2**2)  WHERE
C                ATE=1.5789D5*Z1*Z1/TE
C                TE=ELECTRON TEMPERATURE (K)
C                V1=INITIAL EFFECTIVE PRINCIPAL QUANTUM NUMBER
C                V2=FINAL EFFECTIVE PRINCIPAL QUANTUM NUMBER
C      Z1=TARGET ION CHARGE+1
C      PY=P-FACTOR
C
C NOTES: THIS ROUTINE IS NOT YET PROPERLY ANNOTATED
C
C UNIX-IDL PORT:
C
C VERSION: 1.1                          DATE: 16-1-96
C MODIFIED: TIM HAMMOND (TESSELLA SUPPORT SERVICES PLC)
C               - FIRST VERSION
C
C VERSION: 1.2                          DATE: 16-05-07
C MODIFIED: Allan Whiteford
C             - Updated comments as part of subroutine documentation
C               procedure.
C-----------------------------------------------------------------------
C
       IF(Y-0.04)9,9,10
    9  PY=-0.2756644*(DLOG(Y)+0.41)
       GO TO 15
   10  IF(Z1-1.0)11,11,14
   11  IF(Y-1.0)12,12,13
   12  PY=(0.0196*Y+0.0882)/(Y+0.075)
       GO TO 15
   13  Y1=0.066/DSQRT(Y)
       PY=Y1*(1.0+8.0*Y1)
       GO TO 15
   14  Y1=1.0/Y
       PY=0.2+Y1*(0.04-0.00068*Y1)
   15  RETURN
       END
      REAL*8             PY,          Y,           Z1
```