ADAS Subroutine bgtest

```
C

      SUBROUTINE BGTEST( IZ1    , IL        ,
     &                   IA     , ISA    , ILA   , XJA   , WA    ,
     &                   NV     , SCEF   ,
     &                   ITRAN  ,
     &                   TCODE  , I1A    , I2A   , AVAL  , SCOM  ,
     &                   numcom , outcom
     &                 )

C-------------------------------------------------------------------
C
C  ****************** FORTRAN77 SUBROUTINE: BGTEST ********************
C
C  PURPOSE:    Examines the collison strengths of adf04 files for any
C              discrepencies, outlyiny points, mistakes etc.
C
C              Three methods are used for checking
C                o  fit a minmax polynominal and flag excessive errors
C                o  find large deviations from a 3-point running average
C                o  find excessive changes in slope
C
C              The first method really checks for smoothness with the
C              second looking for outlying points. (The minmax fit
C              should also spot these). The third is not so successful
C              and care should be taken in using it.
C
C              All collisions and temperatures are transformed by the
C              Burgess-Tully method before the tests are applied.
C
C              Based on off-line test_adf04.for code (Martin O'Mullane,
C              16-2-99).
C
C
C  CALLING PROGRAM: ADAS216
C
C  SUBROUTINE:
C
C  INPUT : (I*4)
C
C  ROUTINES:
C          ROUTINE    SOURCE    BRIEF DESCRIPTION
C          -------------------------------------------------------------
C          BGTRAN     ADAS      RETURNS BURGESS-TULLY TRANSFORMED
C                               TEMPERATURE AND COLLISION STRENGTH
C          I4UNIT     ADAS      FETCH UNIT NUMBER FOR OUTPUT OF MESSAGES
C
C
C   AUTHOR  : MARTIN O'MULLANE,
C             K1/1/43,
C             JET
C
C  VERSION : 1.1                          DATE: 17/03/1999
```

```
C  MODIFIED : MARTIN O'MULLANE
C             FIRST VERSION.
C
C  VERSION  : 1.2                          DATE: 16/11/2001
C  MODIFIED : Martin O'Mullane
C             Problem with comment array being overwritten. Add check
C             but continue to process.
C
C-------------------------------------------------------------------
       CHARACTER*80      OUTCOM(210+200*NVMAX)
       CHARACTER         TCODE(NDTRN)
       INTEGER           I1A(NDTRN),  I2A(NDTRN),  IA(NDLEV),   IL
       INTEGER           ILA(NDLEV),  ISA(NDLEV),  ITRAN,       IZ1
       INTEGER           NUMCOM,      NV
       REAL*8            AVAL(NDTRN), SCEF(NVMAX), SCOM(NVMAX,NDTRN)
       REAL*8            WA(NDLEV),   XJA(NDLEV)
```