ADAS Subroutine xxcheb

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      SUBROUTINE XXCHEB( X , Y , N , A , M1 , REF )
C-----------------------------------------------------------------------
C
C  ***************** FORTRAN77 SUBROUTINE: XXCHEB *********************
C
C  PURPOSE:           CARRY OUT CHEBYSCHEV POLYNOMIAL FIT ALGORITHM
C                     (DIRECT REPLACEMENT FOR NAG MINIMAX POLYNIMIAL
C                      COEFT. ROUTINE E02ACF - has same argument list).
C
C  REFERENCE:         TRANSLATION FROM ALGOL CHEBYSCHEV POLYNOMIAL FIT
C                     ALGORITHM BY -
C                     Boothroyd,
C                     Communications of the ACM, 10(12), December 1967
C
C  CALLING PROGRAMS:  XXMNMX
C
C  SUBROUTINE:
C
C  INPUT : (R*8)  X()     = Array of Input X Co-ordinates
C                           Dimension = N
C  INPUT : (R*8)  Y()     = Array of Input Y Co-ordinates
C                           Dimension = N
C  INPUT : (I*4)  N       = Number of Data Points
C                           Dimension = N
C  OUTPUT: (R*8)  A()     = Coefficients of the Fitted Polynomial.
C                           Dimension = M1
C  INPUT : (I*4)  M1      = M + 1 = The order of the polynomial to be
C                           found + 1. The highest order term is
C                           A(M1)*X(M) !!!
C  OUTPUT: (R*8)  REF     = Final Reference Deviation.
C
C  NOTES:     Based on Revision 1.2 (13:26:01 13OCT94) of XXCHEB by CJW
C             from the University of Strathclyde with the following
C             bug correction -
C               The line (within the DO 100 loop):
C                  IF (I.NE.J)
C               was corrected to:
C                  IF (I.NE.RJ)
C
C  ROUTINES:  None
C
C  AUTHOR:    CJW (University of Strahclyde)
C  EDITED BY: PAUL BRIDEN (Tessella Support Services plc)
C             K1/0/37
C             JET ext. 5023
C
C  DATE:      31/10/94
C
C-----------------------------------------------------------------------
C
C-----------------------------------------------------------------------
      INTEGER           M1,        N
```

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REAL*8              A(M1),      REF,        X(N),       Y(N)
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