

# ADAS Subroutine lstsq

SUBROUTINE LSTSQ(IT,C,E12,GF,N,T,U,B,RMS)

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C \*\*\*\*\* FORTRAN77 SUBROUTINE: LSTSQ \*\*\*\*\*

C PURPOSE: TO PERFORM FIVE POINT SPLINE FIT TO REDUCED OMEGAS

C INPUT:

C           E12  TRANSITION ENERGY  (RYD)  
C           GF    GF  
C           IT    TRANSITION TYPE  
C           T     ENERGY  
C           U     OMEGA  
C           N     NUMBER OF DATA POINTS  
C           C     C PARAMETER

C OUTPUT:

C           B     KNOTS VALUES

C LOCAL VARIABLES/CONSTANTS:

C           A(,)  
C           V  
C           W  
C           Y()  
C           XX  
C           YY

C CALLS:

C           SPLS    - CALCULATE CUBIC SPLINE FIT COEFFICIENTS  
C           ETRED   - CALCULATE REDUCED ENERGIES  
C           OURED   - CALCULATE REDUCED OMEGAS  
C           MATIN1  - INVERT MATRIX TO GET KNOT POINTS  
C           ONE     - GET KNOT POINTS IF ONLY ONE DATA POINT  
C           TWO     - GET KNOT POINTS IF ONLY TWO DATA POINTS  
C           THREE   - GET KNOT POINTS IF ONLY THREE DATA POINTS  
C           FOUR    - GET KNOT POINTS IF ONLY FOUR DATA POINTS

C DATE: 02-07-95 VERSION 1.1

C WRITTEN: A.LANZAFAME & D.H.BROOKS

C           UNIV.OF STRATHCLYDE,

C           CONVERTED FROM BBC BASIC

C-----  
INTEGER           IT,           N  
REAL\*8            B(5),        C,           E12,           GF  
REAL\*8            RMS,         T(N),       U(N)