


```

C INPUT : (R*8)  ALPHA( ) =
C
C           1st DIMENSION: ENERGY INDEX
C
C OUTPUT: (R*8)  SIGA( ) = VALID CROSS SECTIONS READ FROM INPUT FILE
C
C           FOR PRINCIPAL QUATUM NUMBER 'INSEL' AND
C           GIVEN SUB-BLOCK. (UNITS: cm**2)
C           1st DIMENSION: ENERGY INDEX
C
C           (I*4)  IE      = ARRAY INDEX: ENERGY INDEX
C           (I*4)  I1ST   = ARRAY INDEX: FIRST VALID ENERGY INDEX - 1
C           (I*4)  IN      = 'NDATA(2)' - IF 'INSEL > NDATA(2)'

```

C ROUTINES:

ROUTINE	SOURCE	BRIEF DESCRIPTION
I4IDFL	ADAS	PROVIDES UNIQUE INDEX GIVEN N AND L
I4IDFM	ADAS	PROVIDES UNIQUE INDEX GIVEN N, L AND M

```

C AUTHOR:  PAUL E. BRIDEN (TESSELLA SUPPORT SERVICES PLC)
C          K1/0/81
C          JET EXT. 4569
C

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C DATE:    07/02/91
C

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C UPDATE:  19/04/95  H P SUMMERS - EXTENSION TO INCLUDE L AND M
C
C          SUB-SHELL CROSS-SECTIONS
C

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C VERSION  : 1.2
C

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C DATE     : 22-05-2007
C

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C MODIFIED : Martin O'Mullane
C

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C          - Remove unused m-subshell data possibility.
C

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C
C          INTEGER      IEDATA(2),  ILSEL,      INSEL
C          INTEGER      NDATA(2),   NENER,      NENRGY,   NSHELL
C          REAL*8       ALPHA( NENRGY ),      SIGA( NENRGY )
C          REAL*8       XSIGL( NENRGY, (NSHELL*(NSHELL+1))/2 )
C          REAL*8       XSIGN( NENRGY, NSHELL ),      XTOT( NENRGY )
C

```