ADF39: Opacity project extension: photoionisation cross-sections

The basic process is inner shell photo-ionisation $(n_c l_c^{\,q})nl + \gamma \rightarrow (n_c l_c^{\,q-1})nl + e$. A separate file is provided for each n. It is convenient at the production stage to separate the level list file (denoted by the postfix 'l') from the partial cross-section file (denoted by postfix 'px'). Separate files are given for term (LS) coupling and intermediate (IC) coupling. Outer shell photo-ionisation, $(n_c l_c^{\,q})nl + \gamma \rightarrow (n_c l_c^{\,q}) + e$, is included for completeness. Where inner shell photo-ionisation is present, the atomic structure is optimised for the inner-shell processses

Utilising subroutines :

ADAS204? ADAS208? ADAS212?

Formatted files to ADF39 specification :

Database Status Date = March 17, 2003 Data type =pea files Data root =/.../adas/adas/adf39/

Recombining seq.	*Library*	*Elements*	*Members*	*n*	*Comments*	*Quality*
Bare nucleus	nrb02##	He, C, O, S, Fe	<ion>lsK<n>l.dat	1,2,3,4,5,6	LS resolution	medium
		He, C, O, S, Fe	<ion>icK<n>l.dat	1,2,3,4,5,6	IC resolution	medium
		He, C, O, S, Fe	<ion>lsK<n>px.dat	1,2,3,4,5,6	LS resolution	medium
		He, C, O, S, Fe	<ion>icK<n>px.dat	1,2,3,4,5,6	IC resolution	medium
H-like.	nrb02#h	He, C, O, S, Fe	<ion>lsK<n>l.dat	1,2,3,4,5,6	LS resolution	medium
		He, C, O, S, Fe	<ion>icK<n>l.dat	1,2,3,4,5,6	IC resolution	medium
		He, C, O, S, Fe	<ion>lsK<n>px.dat	1,2,3,4,5,6	LS resolution	medium
		He, C, O, S, Fe	<ion>icK<n>px.dat	1,2,3,4,5,6	IC resolution	medium
He-like.	nrb02#he	C, O, S, Fe	<ion>lsK<n>l.dat	1,2,3,4,5,6	LS resolution	medium
		C, O, S, Fe	<ion>icK<n>l.dat	1,2,3,4,5,6	IC resolution	medium
		C, O, S, Fe	<ion>lsK<n>px.dat	1,2,3,4,5,6	LS resolution	medium
		C, O, S, Fe	<ion>icK<n>px.dat	1,2,3,4,5,6	IC resolution	medium
		C, O, S, Fe	<ion>lsL<n>l.dat	2,3,4	IC resolution	medium
		C, O, S, Fe	<ion>icL<n>l.dat	2,3,4	IC resolution	medium
		C, O, S, Fe	<ion>lsL<n>px.dat	2,3,4	LS resolution	medium
		C, O, S, Fe	<ion>icL<n>px.dat	2,3,4	IC resolution	medium
Li-like.	nrb02#li	C, O, S, Fe	<ion>lsK<n>l.dat	2,3,4,5,6	LS resolution	medium

C, O, S, Fe	<ion>icK<n>l.dat	2,3,4,5,6	IC resolution	medium
C, O, S, Fe	<ion>lsK<n>px.dat	2,3,4,5,6	LS resolution	medium
C, O, S, Fe	<ion>icK<n>px.dat	2,3,4,5,6	IC resolution	medium
C, O, S, Fe	<ion>lsL<n>l.dat	2,3,4	LS resolution	medium
C, O, S, Fe	<ion>icL<n>l.dat	2,3,4	IC resolution	medium
C, O, S, Fe	<ion>lsL<n>px.dat	2,3,4	LS resolution	medium
C, O, S, Fe	<ion>icL<n>px.dat	2,3,4	IC resolution	medium

Notes:

Data lines for LS coupled 'l' file:	*Format:*
[prescribed text], SEQ, [prescribed text],IZ0, CCPLG	1a5,1a2,1a11,i2,50x,1a4
[blank line]	1a80
[prescribed text], BWNP,[prescribed text],NPRNT	1a45,f12.1,1a8,i4
[prescribed text field]	1a23
[prescribed text field]	1a56
[prescribed text field]	1a56
for indp=1,NPRNT	
IND0, CFGP, ISP, ILP ,XJP,WNPI	i6,10x,1a20,1x,i1,1x,i1,1x,f4.1,2x,f10.1
repeat	
[blank line]	1a80
[prescribed text], BWNR, [prescribed text], NTRM	1a45,f12.1,1a7,i5
[prescribed text field]	1a28
[prescribed text field]	1a56
[prescribed text field]	1a56
for indx=1,NTRM	

INDX,IRSL,CFGT,IS, IL, XJ, WNRT	i6,i6,4x,1a20,1x,i1,1x,i1,1x,f4.1,2x,f10.1
repeat	
[blank line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80

variable identification :

name	*meaning*
SEQ	sequence identifier (two characters)
IZ0	nuclear charge
CCPLG	coupling scheme, '/LS/' => LS coupling
BWNP	binding wave number of lowest parent (cm-1)
NPRNT	number of metastable parents (including ground parent)
IND0(INDP)	parent index as used in the '*px*' file
CFGP	configuration (or Eissner code therefor) for parent.
ISP	multiplicity of parent ($2S_p+1$)
ILP	lotal orbital quantum number (L_p) for parent
XJP	(statist. weight - 1)/2 of parent term
WNPI	energy of parent term relative to lowest parent (cm-1)
BWNR	binding wave number of lowest resolved term (cm-1)
NTRM	number of terms in LS-resolved set
INDX	index value for term
IRSL	initial term index as used in the 'px' file
CFGT	configuration (or Eissner code therefor) for level.

IS	multiplicity for level (2*S+1)
IL	total orbital quantum number for term
XJ	(statist. weight - 1)/2 for term
WNRI	energy of term relative to ground (cm-1)

Table B39c – example – LS coupling level list (l) file.

```
SEQ='HE'     NUCCHG= 6                                                  /LS/

   PARENT TERM INDEXING                BWNP=   3952439.9  NPRNT=   4
   --------------------
   INDP         CODE                 S L   WI        WNP
   ----         ----                 - -   --  ----------
     1          1S1                 (2)0( 0.5)        0.0
     2          3S1                 (2)0( 0.5)  3513280.1
     3          3P1                 (2)1( 2.5)  3513373.4
     4          3D1                 (2)2( 4.5)  3513448.2

   LS RESOLVED TERM INDEXING           BWNR=   4268185.4  NTRM=    6
   -------------------------
   INDX  IRSL   CODE                 S L   WJ        WNR
   ----  ----   ----                 - -   --  ----------
     1     1    1S1 3S1             (3)0( 1.0)        0.0
     2     2    1S1 3P1             (3)1( 4.0)    14018.3
     3     3    1S1 3S1             (1)0( 0.0)    15190.7
     4     4    1S1 3D1             (3)2( 7.0)    22628.8
     5     5    1S1 3D1             (1)2( 2.0)    23279.9
     6     6    1S1 3P1             (1)1( 1.0)    25953.9

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Data lines for IC coupled 'l' file:	*Format:*
[prescribed text], SEQ, [prescribed text],IZ0, CFGP	1a5,1a2,1a11,i2,50x,1a4
[blank line]	1a80
[prescribed text], BWNP,[prescribed text],NPRNT	1a45,f12.1,1a8,i4
[prescribed text field]	1a23
[prescribed text field]	1a56
[prescribed text field]	1a56

for indp=1,NPRNT	
IND0, CFGP, ISP, ILP ,XJP,WNPI	i6,10x,1a20,1x,i1,1x,i1,1x,f4.1,2x,f10.1
repeat	
[blank line]	1a80
[prescribed text], BWNR, [prescribed text], NLVL	1a45,f12.1,1a7,i5
[prescribed text field]	1a28
[prescribed text field]	1a56
[prescribed text field]	1a56
for indx=1,NLVL	
INDX,ISRL,CFGL,IS, IL, XJ, WNRL	i6,i6,4x,1a20,1x,i1,1x,i1,1x,f4.1,2x,f10.1
repeat	
[blank line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80

variable identification :

name	*meaning*
SEQ	sequence identifier (two characters)
IZ0	nuclear charge
CFGP	coupling scheme, ‘/IC/’ => intermediate coupling
BWNP	binding wave number of lowest parent(cm-1)
NPRNT	number of metastable parents (including ground parent)
IND0 (INDP)	parent index as used in the *‘px’* file.
CFGP	configuration (or Eissner code therefor) for parent.

ISP	multiplicity of parent ($2S_p+1$)
ILP	total orbital quantum number (L_p) for parent
XJP	J quantum number of parent level.
WNPI	energy of parent relative to lowest parent (cm-1)
BWNR	binding wave number of lowest resolved level (cm-1)
NLVL	number of levels in IC coupled set
INDX	index value for level
CFGL	configuration (or Eissner code therefor) for level.
IS	multiplicity for level (2*S+1)
IL	total orbital quantum number for level (L)
XJ	J quantum number of level.
WNRL	energy of level relative to ground (cm-1)

Table B39d – example – intermediate coupling level list (l) file.

```
SEQ='HE'     NUCCHG= 6                                                  /IC/

   PARENT LEVEL INDEXING               BWNP=   3952439.9  NPRNT=   6
   ---------------------
   INDP         CODE                 S L   WI        WNP
   ----         ----                 - -   --  ----------
     1          1S1                 (2)0( 0.5)        0.0
     2          3P1                 (2)1( 0.5)  3513279.9
     3          3S1                 (2)0( 0.5)  3513280.1
     4          3D1                 (2)2( 1.5)  3513420.2
     5          3P1                 (2)1( 1.5)  3513420.2
     6          3D1                 (2)2( 2.5)  3513466.9

   IC RESOLVED LEVEL INDEXING          BWNR=   4268185.4  NLVL=   10
   --------------------------
   INDX  IRSL   CODE                 S L   WJ        WNR
   ----  ----   ----                 - -   --  ----------
     1     1    1S1 3S1             (3)0( 1.0)        0.0
     2     2    1S1 3P1             (3)1( 0.0)    13924.8
     3     3    1S1 3P1             (3)1( 1.0)    13971.2
     4     4    1S1 3P1             (3)1( 2.0)    14065.1
     5     5    1S1 3S1             (1)0( 0.0)    15190.7
     6     6    1S1 3D1             (3)2( 1.0)    22600.8
     7     7    1S1 3D1             (3)2( 2.0)    22618.7
     8     8    1S1 3D1             (3)2( 3.0)    22647.5
     9     9    1S1 3D1             (1)2( 2.0)    23280.7
    10    10    1S1 3P1             (1)1( 1.0)    25954.2
```

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C-------------------------------------------------------------------------------------------------------
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```

Data lines for LS coupled 'px' file:	*Format:*
ELEM, IZ, CCPLG,NENG	1a2,i2,5x,1a4,26x,i2
IENG(I),I=1,NENG	39x,10(i2,10x)
ENG(I),I=1,NENG	31x,10e12.3
[blank line]	1a80
IPCS(I),I=1,NENG	39x,10(i2,10x)
until <blank line for each initial state> do	
IRSL,G,IND0,(PCS(I),I=1,NENG)	3i5, e15.6,10e12.3
repeat	
[blank line]	1a80
[prescribed text],NRSLMX	1a10,i4
[blank line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80

variable identification :

name	*meaning*
ELEM	sequence identifier (two characters)

IZ	ionised ion charge
CCPLG	coupling scheme, '/LS/' => LS coupling
NENG	number of energies for tabulation
IENG()	indexing for energy tabulation
ENG()	ejected electron energies relative to respective parent (Ryd). Note that photo-ionisation from a given initial state to different final parents correspond to different photon energies.
IPCS()	indexing for photoionisation cross-section tabulation
IRSL	initial term (see term list in 'l' file)
G	statistical weight of initial term
IND0	index of parent to which photoionisation occurs
DELI	threshold photo ionisation energy (Rydberg), from IRSL to INDP
PCS()	photoionisation cross-section (cm^2)
NRSLMX	maximum initial n processed (assumes all l)

Table B39e – example – LS coupling rate coefficient (px) file.

C 5	/LS/		NENG=12									
			E: 1	2	3	4	5	6	7	8	9	10
			11	12								
			0.000E+00	9.600E-01	1.600E+00	3.200E+00	4.800E+00	9.600E+00	1.600E+01	2.000E+01	2.400E+01	4.800E+01
			7.200E+01	9.600E+01								
IRSL	G	IND0	DELI(RYD)	PCS: 1	2	3	4	5	6	7	8	9	10
				11	12								
4	15	1	2.671073E+00	1.360E-18	6.444E-19	4.092E-19	1.503E-19	6.422E-20	9.133E-21	1.539E-21	6.639E-22	3.274E-22	1.926E-23
				3.283E-24	7.807E-25								
5	5	1	2.665141E+00	1.357E-18	6.433E-19	4.087E-19	1.501E-19	6.417E-20	9.129E-21	1.538E-21	6.637E-22	3.273E-22	1.926E-23
				3.282E-24	7.807E-25								
2	9	1	2.749538E+00	1.375E-18	8.383E-19	6.132E-19	3.017E-19	1.631E-19	3.888E-20	1.031E-20	5.470E-21	3.199E-21	3.604E-22
				9.040E-23	3.171E-23								
6	3	1	2.640773E+00	1.321E-18	8.137E-19	5.979E-19	2.961E-19	1.608E-19	3.853E-20	1.025E-20	5.444E-21	3.186E-21	3.596E-22
				9.027E-23	3.167E-23								
1	3	1	2.877282E+00	1.164E-18	7.741E-19	6.003E-19	3.397E-19	2.087E-19	6.833E-20	2.472E-20	1.529E-20	1.019E-20	1.969E-21
				6.988E-22	3.224E-22								
3	1	1	2.738854E+00	1.108E-18	7.462E-19	5.818E-19	3.320E-19	2.050E-19	6.761E-20	2.456E-20	1.521E-20	1.014E-20	1.967E-21
				6.990E-22	3.227E-22								
1	3	2	3.489262E+01	1.761E-19	1.709E-19	1.657E-19	1.509E-19	1.364E-19	1.008E-19	6.968E-20	5.644E-20	4.633E-20	1.747E-20
				8.328E-21	4.574E-21								
3	1	2	3.475419E+01	1.743E-19	1.695E-19	1.644E-19	1.500E-19	1.356E-19	1.004E-19	6.944E-20	5.627E-20	4.620E-20	1.744E-20
				8.315E-21	4.568E-21								

```
    2    9    3    3.476573E+01   1.749E-19   1.699E-19   1.648E-19   1.502E-19   1.358E-19   1.005E-19   6.948E-20   5.629E-20   4.622E-20   1.744E-20
                                   8.317E-21   4.569E-21
    6    3    3    3.465696E+01   1.744E-19   1.694E-19   1.643E-19   1.498E-19   1.354E-19   1.002E-19   6.933E-20   5.618E-20   4.614E-20   1.742E-20
                                   8.309E-21   4.565E-21
    4   15    4    3.468794E+01   1.745E-19   1.696E-19   1.644E-19   1.499E-19   1.355E-19   1.003E-19   6.938E-20   5.621E-20   4.616E-20   1.743E-20
                                   8.311E-21   4.566E-21
    5    5    4    3.468201E+01   1.745E-19   1.695E-19   1.644E-19   1.499E-19   1.355E-19   1.003E-19   6.937E-20   5.621E-20   4.616E-20   1.743E-20
                                   8.311E-21   4.566E-21

   NRSLMX=   6

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```

Data lines forIC coupled 'px' file:	*Format:*
ELEM, IZ, CCPLG,NENG	1a2,i2,5x,1a4,26x,i2
IENG(I),I=1,NENG	39x,10(i2,10x)
ENG(I),I=1,NENG	31x,10e12.3
[blank line]	1a80
IPCS(I),I=1,NENG	39x,10(i2,10x)
until <blank line for each initial state> do	
IRSL,G,IND0,DELI,(PCS(I),I=1,NENG)	3i5, e15.6,10e12.3/30x, 10e12.3
repeat	
[blank line]	1a80
[prescribed text],NRSLMX	1a10,i4
[blank line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80
[prescribed comment line]	1a80

variable identification :

name	*meaning*
ELEM	sequence identifier (two characters)
IZ	ionised ion charge
CCPLG	coupling scheme, '/IC/' => IC coupling
NENG	number of energies for tabulation
IENG()	indexing for energy tabulation
ENG()	ejected electron energies (Ryd)
IPCS()	indexing for photoionisation cross-section tabulation
IRSL	initial level (see level list in 'l' file)
G	statistical weight of level
IND0	index of parent to which photoionisation occurs
DELI	photon ionisation energy (Rydberg)
PCS()	photoionisation cross-section (cm^2)
NRSLMX	maximum resolved n

Table B39f – example – intermediate coupling rate coefficient (px) file.

```
C  5     /IC/                  NENG=12
                                  E: 1          2          3          4          5          6          7          8          9         10
                                    11         12
                               0.000E+00  9.600E-01  1.600E+00  3.200E+00  4.800E+00  9.600E+00  1.600E+01  2.000E+01  2.400E+01  4.800E+01
                               7.200E+01  9.600E+01

 IRSL    G IND0     DELI(RYD)      PCS: 1          2          3          4          5          6          7          8          9         10
                                       11         12
    1    3    1    2.877282E+00  1.164E-18  7.741E-19  6.003E-19  3.397E-19  2.087E-19  6.833E-20  2.472E-20  1.529E-20  1.019E-20  1.969E-21
                                  6.988E-22  3.224E-22
    6    3    1    2.671329E+00  1.360E-18  6.444E-19  4.093E-19  1.503E-19  6.422E-20  9.133E-21  1.539E-21  6.639E-22  3.274E-22  1.926E-23
                                  3.283E-24  7.807E-25
    3    3    1    2.749967E+00  1.375E-18  8.384E-19  6.132E-19  3.017E-19  1.631E-19  3.888E-20  1.031E-20  5.470E-21  3.199E-21  3.604E-22
                                  9.041E-23  3.171E-23
   10    3    1    2.640770E+00  1.321E-18  8.137E-19  5.979E-19  2.961E-19  1.608E-19  3.853E-20  1.025E-20  5.444E-21  3.186E-21  3.596E-22
```

				9.027E-23	3.167E-23								
5	1	1	2.738854E+00	1.108E-18	7.462E-19	5.818E-19	3.320E-19	2.050E-19	6.761E-20	2.456E-20	1.521E-20	1.014E-20	1.967E-21
				6.990E-22	3.227E-22								
7	5	1	2.671166E+00	1.360E-18	6.444E-19	4.093E-19	1.503E-19	6.422E-20	9.133E-21	1.539E-21	6.639E-22	3.274E-22	1.926E-23
				3.283E-24	7.807E-25								
9	5	1	2.665133E+00	1.357E-18	6.433E-19	4.087E-19	1.501E-19	6.417E-20	9.129E-21	1.538E-21	6.637E-22	3.273E-22	1.926E-23
				3.282E-24	7.807E-25								
2	1	1	2.750390E+00	1.376E-18	8.385E-19	6.133E-19	3.017E-19	1.631E-19	3.888E-20	1.031E-20	5.471E-21	3.199E-21	3.604E-22
				9.041E-23	3.171E-23								
4	5	1	2.749112E+00	1.375E-18	8.382E-19	6.131E-19	3.016E-19	1.631E-19	3.888E-20	1.030E-20	5.470E-21	3.199E-21	3.604E-22
				9.040E-23	3.171E-23								
8	7	1	2.670903E+00	1.360E-18	6.443E-19	4.092E-19	1.503E-19	6.422E-20	9.133E-21	1.539E-21	6.639E-22	3.274E-22	1.926E-23
				3.283E-24	7.807E-25								
3	3	2	3.476531E+01	1.175E-19	1.142E-19	1.107E-19	1.009E-19	9.123E-20	6.749E-20	4.668E-20	3.782E-20	3.105E-20	1.172E-20
				5.588E-21	3.070E-21								
4	5	2	3.476445E+01	2.446E-42	2.376E-42	2.305E-42	2.101E-42	1.899E-42	1.405E-42	9.717E-43	7.873E-43	6.464E-43	2.440E-43
				1.163E-43	6.390E-44								
10	3	2	3.465611E+01	5.722E-20	5.559E-20	5.392E-20	4.915E-20	4.444E-20	3.288E-20	2.275E-20	1.844E-20	1.514E-20	5.717E-21
				2.726E-21	1.498E-21								
2	1	2	3.476573E+01	1.749E-19	1.699E-19	1.648E-19	1.502E-19	1.358E-19	1.005E-19	6.948E-20	5.629E-20	4.622E-20	1.744E-20
				8.317E-21	4.569E-21								
5	1	3	3.475419E+01	1.743E-19	1.695E-19	1.644E-19	1.500E-19	1.356E-19	1.004E-19	6.944E-20	5.627E-20	4.620E-20	1.744E-20
				8.315E-21	4.568E-21								
7	5	3	3.468650E+01	5.818E-25	2.084E-25	1.145E-25	3.194E-26	1.118E-26	1.086E-27	1.376E-28	5.276E-29	2.373E-29	1.035E-30
				1.545E-31	3.406E-32								
9	5	3	3.468047E+01	5.817E-25	2.084E-25	1.145E-25	3.194E-26	1.118E-26	1.086E-27	1.376E-28	5.275E-29	2.373E-29	1.035E-30
				1.545E-31	3.406E-32								
1	3	3	3.489262E+01	1.761E-19	1.709E-19	1.657E-19	1.509E-19	1.364E-19	1.008E-19	6.968E-20	5.644E-20	4.633E-20	1.747E-20
				8.328E-21	4.574E-21								
6	3	3	3.468667E+01	5.818E-25	2.084E-25	1.145E-25	3.194E-26	1.118E-26	1.086E-27	1.376E-28	5.276E-29	2.373E-29	1.035E-30
				1.545E-31	3.406E-32								
3	3	3	3.476531E+01	5.728E-25	2.660E-25	1.689E-25	6.341E-26	2.816E-26	4.601E-27	9.192E-28	4.338E-28	2.315E-28	1.936E-29
				4.254E-30	1.383E-30								
10	3	3	3.465611E+01	5.710E-25	2.652E-25	1.684E-25	6.323E-26	2.808E-26	4.590E-27	9.172E-28	4.330E-28	2.311E-28	1.934E-29
				4.249E-30	1.382E-30								
2	1	3	3.476573E+01	5.728E-25	2.660E-25	1.689E-25	6.342E-26	2.816E-26	4.601E-27	9.192E-28	4.338E-28	2.315E-28	1.936E-29
				4.254E-30	1.383E-30								
4	5	3	3.476445E+01	5.728E-25	2.660E-25	1.689E-25	6.341E-26	2.816E-26	4.601E-27	9.191E-28	4.338E-28	2.315E-28	1.936E-29
				4.254E-30	1.383E-30								
8	7	3	3.468624E+01	5.818E-25	2.084E-25	1.145E-25	3.194E-26	1.118E-26	1.086E-27	1.376E-28	5.276E-29	2.373E-29	1.035E-30
				1.545E-31	3.406E-32								
7	5	4	3.468778E+01	1.106E-19	1.074E-19	1.042E-19	9.498E-20	8.588E-20	6.354E-20	4.396E-20	3.562E-20	2.925E-20	1.104E-20
				5.267E-21	2.894E-21								
8	7	4	3.468752E+01	1.606E-33	1.560E-33	1.513E-33	1.379E-33	1.247E-33	9.226E-34	6.383E-34	5.172E-34	4.247E-34	1.603E-34
				7.647E-35	4.201E-35								
9	5	4	3.468175E+01	6.393E-20	6.211E-20	6.023E-20	5.491E-20	4.964E-20	3.673E-20	2.541E-20	2.059E-20	1.691E-20	6.384E-21
				3.045E-21	1.673E-21								
6	3	4	3.468794E+01	1.745E-19	1.696E-19	1.644E-19	1.499E-19	1.355E-19	1.003E-19	6.938E-20	5.621E-20	4.616E-20	1.743E-20
				8.311E-21	4.566E-21								
3	3	5	3.476658E+01	5.740E-20	5.576E-20	5.408E-20	4.929E-20	4.456E-20	3.296E-20	2.280E-20	1.847E-20	1.517E-20	5.724E-21
				2.729E-21	1.499E-21								
10	3	5	3.465739E+01	1.172E-19	1.138E-19	1.104E-19	1.006E-19	9.098E-20	6.733E-20	4.658E-20	3.775E-20	3.100E-20	1.170E-20
				5.582E-21	3.067E-21								
4	5	5	3.476573E+01	1.749E-19	1.699E-19	1.648E-19	1.502E-19	1.358E-19	1.005E-19	6.948E-20	5.629E-20	4.622E-20	1.744E-20
				8.317E-21	4.569E-21								

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     2    1    5    3.476701E+01   1.600E-42   1.554E-42   1.507E-42   1.373E-42   1.242E-42   9.185E-43   6.353E-43   5.147E-43   4.226E-43   1.595E-43
                                    7.605E-44   4.178E-44
     6    3    6    3.468837E+01   4.298E-33   4.175E-33   4.049E-33   3.691E-33   3.337E-33   2.469E-33   1.708E-33   1.384E-33   1.137E-33   4.291E-34
                                    2.047E-34   1.124E-34
     7    5    6    3.468821E+01   6.394E-20   6.212E-20   6.024E-20   5.491E-20   4.965E-20   3.674E-20   2.542E-20   2.059E-20   1.691E-20   6.385E-21
                                    3.045E-21   1.673E-21
     9    5    6    3.468218E+01   1.106E-19   1.074E-19   1.042E-19   9.497E-20   8.586E-20   6.353E-20   4.396E-20   3.562E-20   2.925E-20   1.104E-20
                                    5.266E-21   2.893E-21
     8    7    6    3.468794E+01   1.745E-19   1.696E-19   1.644E-19   1.499E-19   1.355E-19   1.003E-19   6.938E-20   5.621E-20   4.616E-20   1.743E-20
                                    8.311E-21   4.566E-21

   NRSLMX=   6

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