ADF13: ionisation per photon coefficients

Provides ionisation per photon data for selected spectrum lines. The formatting conventions and variable storage are given below.

Utilising subroutines :

ADAS501

Formatted files to ADF13 specification :

Database Status Date = March 17, 2003 Data type = sxb files Data root = /.../adas/adas/adf13/

Element	*Members*	*Prefix*	*Library*	*Resolution*	*Comments*	*Quality*
Be	be0,be1,be2,be3	llu,llr,pju,pjr	sxb93#be	LS	Dickson '93	good
C	c0,c1,c2,c3	llu,llr,pju,pjr	sxb93#c	LS	Dickson '93	good
Cr	cr0	llu,llr	sxb93#cr	LS	Summers & Badnell '95	good
He	he0	llu,llr,pju,pjr	sxb93#he	LS	Dickson '93	good
Mo	mo0	llu,llr	sxb93#mo	LS	Summers & Badnell '95	good
N	n4	llu,llr	sxb93#n	LS	Summers '95	good
O	o1,o4,o5	llu,llr,pju,pjr	sxb93#o	LS	Dickson '93	good
C	c0	vsu,vsr	sxb96#c	LS	O'mullane, Summers '96	good
H	h0	pju,pjr	sxb96#h	LS	GCR Project	high
He	he0,he1	pju,pjr	sxb96#he	LS	GCR Project	high
Li	li0,li1,li2	pju,pjr	sxb96#li	LS	GCR Project	high
C	c0,c1,.c2,c3,c4,c5	pju,pjr	sxb96#c	LS	GCR Project	high
N	n0, n1,. n2, n3, n4,	pju,pjr	sxb96#n	LS	GCR Project	high
	n5, n6	pju,pjr	sxb96#n	LS	GCR Project	high
O	o0, o1,. o2, o3, o4,	pju,pjr	sxb96#o	LS	GCR Project	high
	o5, o6,o7	pju,pjr	sxb96#o	LS	GCR Project	high
Ne	ne0, ne1,. ne2, ne3,	pju,pjr	sxb96#o	LS	GCR Project	high
	ne4,ne5, ne6, ne7	pju,pjr	sxb96#o	LS	GCR Project	high

	ne8,ne9	pju,pjr	sxb96#o	LS	GCR Project	high

Notes: 1. Prefixes are as follow: 'llu' => low level, metastable unresolved; 'llr'=> low level, metastable resolved;

'pju'=> including projection matrices, metastable unresolved; 'pjr'=> including projection matrices, metastable resolved.

2. sxb96 data for hydrogenic ions are calculated using an infinite n-shell dedicated hydrogenic ion code (ADAS310 - variant); all other data are calculated using ADAS208.

5. 1996 is now the year number used for the output from the GCR Project. They are available both in relation to resolved and unresolved metastables and are an update on O'Mullane & Summers, 1996

Data lines :	*Format:*	
NSEL, TEXT	i5,4x,'/',c35,'/'	
for ISEL= 1 to NSEL		
WLNG , NDENS , NTE , FILMEM, CODE , INDM , ISEL	f9, 'A',2i4,2c8,i2,i5	NB. '/' & 'code=' delimited
(DENS(IN), IN=1,NDENS)	8e9.2	
(TE(IT), IT=1,NTE)	8e9.2	
for IN = 1 to NDENS		
(SXB(IN,IT), IT=1,NTE)	8e9.2	
repeat		
repeat		

variable identification :

name	*meaning*
NSEL	number of transitions available
TEXT	information
WLNG	wavelength of transition (Ang)
NDENS	number of densities

NTE	number of temperatures
FILMEM	source specific ion excitation file
CODE	processing code
INDM	associated metastable index in source file
ISEL	transition index
DENS()	electron densities (cm-3)
TE()	electron temperatures (eV)
SXB(,)	finite density ionisation per photon values
	1st parameter electron density index
	2nd parameter electron temperature index

Table B13c - example.

```
    3    /BE+0 IONISATIONS PER PHOTON        /
8254.0 A     5   7 /FILMEM = FBBH91BE/CODE = V2BNDLN1  /INDM = 1/ISEL=    1
 1.00D+11 1.00D+12 5.00D+12 1.00D+13 1.00D+14
 2.00D+00 5.00D+00 1.00D+01 2.00D+01 3.00D+01 5.00D+01 8.00D+01
 8.46D-01 2.55D+00 3.54D+00 4.48D+00 5.06D+00 6.01D+00 7.08D+00
 1.25D+00 3.38D+00 4.60D+00 5.63D+00 6.24D+00 7.20D+00 8.36D+00
 2.14D+00 5.95D+00 8.19D+00 9.80D+00 1.06D+01 1.17D+01 1.31D+01
 3.25D+00 8.80D+00 1.28D+01 1.51D+01 1.60D+01 1.74D+01 1.88D+01
 2.97D+01 7.52D+01 9.60D+01 1.05D+02 1.06D+02 1.07D+02 1.07D+02
4573.0 A     4   7 /FILMEM = FBBH91BE/CODE = V2BNDLN1  /INDM = 1/ISEL=    2
 1.00D+11 1.00D+12 1.00D+13 1.00D+14
 2.00D+00 5.00D+00 1.00D+01 2.00D+01 3.00D+01 5.00D+01 8.00D+01
 3.99D+00 6.51D+00 8.83D+00 1.19D+01 1.42D+01 1.77D+01 2.10D+01
 6.99D+00 8.97D+00 1.08D+01 1.33D+01 1.54D+01 1.87D+01 2.21D+01
 8.68D+00 1.16D+01 1.41D+01 1.59D+01 1.70D+01 1.87D+01 2.02D+01
 3.71D+01 5.63D+01 6.04D+01 6.06D+01 5.90D+01 5.68D+01 5.52D+01
4408.0 A     5   7 /FILMEM = FBBH91BE/CODE = V2BNDLN1  /INDM = 1/ISEL=    3
 1.00D+11 1.00D+12 5.00D+12 1.00D+13 1.00D+14
 2.00D+00 5.00D+00 1.00D+01 2.00D+01 3.00D+01 5.00D+01 8.00D+01
 2.96D+01 4.20D+01 5.18D+01 6.13D+01 6.85D+01 7.97D+01 9.07D+01
 5.37D+01 7.04D+01 8.36D+01 9.56D+01 1.04D+02 1.15D+02 1.25D+02
 1.37D+02 1.80D+02 2.09D+02 2.32D+02 2.69D+02 2.82D+02 2.89D+02
 2.28D+02 2.94D+02 3.59D+02 3.93D+02 4.06D+02 4.23D+02 4.31D+02
 2.01D+03 2.72D+03 3.01D+03 3.16D+03 3.19D+03 3.18D+03 3.11D+03
C-------------------------------------------------------------------------
C
C  IONISATION/PHOTON LIST:
C
C     ISEL     WAVELENGTH   TRANSITION     INFORMATION
C     ----     ----------   ----------     ------------
C       1.       8254.0     2S2P-2S3S      SINGLET FLUX
C       2.       4573.0     2S2P-2S3D      SINGLET FLUX
```

```
C       3.       4408.0     2S2P-2S4S      SINGLET FLUX
C
C
C          WILLIAM J. DICKSON   JET    21ST FEB 1991
C
C--------------------------------------------------------------------------
```