

ADF40: envelope feature photon emissivity coefficients

Provides envelope feature photon emissivity coefficients. Formatting conventions and variable storage are given below.

Utilising subroutines :

ADAS510 ADAS416 ADAS417

Formatted files to ADF40 specification :

Database Status	Date = March 17, 2003	Data type = f_pec files	Data root = /.../adas/adas/adf40/				
Element	Members	Prefix	Library	Resolution	Filter	Comments	Quality
Xe	Xe0 — Xe52		f_pec02#xe	IC		Baseline	moderate

Notes: 1. Envelope feature emissivity data, specified on a wavelength interval can be subject to a filter or instrument transmission function. From the utilisation point of view , there is no practical distinction. A six-digit parameter FCODE is used to specify a filter axis done for total power.

Data lines :

NSEL, SYM, IZ, TEXT,RCODE

for ISEL= 1 to NSEL

FCODE, NPIX , NDENS , NTE , FILMEM, TYPE , INDM , ISEL

WVMIN, WVMAX

(DENS(IN), IN=1,NDENS)

(TE(IT), IT=1,NTE)

for IN = 1 to NDENS

for IT = 1 to NTE

(FPEC(IPIX,IN,IT,ISEL), IPIX=1,NPIX)

repeat

Format:

i5,4x,'/',1a3,i2,1a54,'/',1a2,'/'

a6,i6,2i4,2c8,i2,i5

NB. '/' & 'code=' delimited

2f12.5

8e9.2

8e9.2

8e9.2

repeat

variable identification :

<i>name</i>	<i>meaning</i>
NSEL	number of transitions available
SYM	element symbol in form ##+
IZ	charge of the ion
TEXT	information
RCODE	resolution code; LS=> ls-resolution; IC=> intermediate coupling
FCODE	Filter character code – if present
NPIX	Number of pixels
NDENS	number of densities
NTE	number of temperatures
FILMEM	source specific ion excitation file
TYPE	type of photon emissivity (excit, recomb, cx)
INDM	associated metastable index in source file
ISEL	transition index
WVMIN	minimum wavelength of spectral interval (Angstrom)
WVMAX	maximum wavelength of spectral interval (Angstrom)
DENS()	electron densities (cm ⁻³)
TE()	electron temperatures (eV)
FPEC(,,)	finite density feature photon emissivity coefficients (cm ³ s ⁻¹) 1st parameter pixel index 2nd parameter electron density index 3rd parameter electron temperature index

Table B40c

```

2 /Xe10 envelope feature photon emissivity coefficients /IC/
ft1235 128 24 24 /filmem = /type = f_excit /indm = 1/isel = 1
200.00000 1000.00000
1.00e+01 1.00e+02 1.00e+03 1.00e+04 1.00e+05 1.00e+06 3.00e+06 1.00e+07
3.00e+07 1.00e+08 3.00e+08 1.00e+09 3.00e+09 1.00e+10 3.00e+10 1.00e+11
3.00e+11 1.00e+12 3.00e+12 1.00e+13 3.00e+13 1.00e+14 3.00e+14 1.00e+15
4.31e-02 6.03e-02 8.62e-02 1.29e-01 1.72e-01 2.59e-01 4.31e-01 6.03e-01
8.62e-01 1.29e+00 1.72e+00 2.59e+00 4.31e+00 6.03e+00 8.62e+00 1.29e+01
1.72e+01 2.59e+01 4.31e+01 6.03e+01 8.62e+01 1.29e+02 1.72e+02 2.59e+02
1.00e-74 1.00e-74 1.00e-74 1.00e-74 1.00e-74 1.00e-74 2.82e-30 3.22e-24
.
.
.
9.19e-10 1.56e-09 2.51e-09 3.14e-09 3.76e-09 4.36e-09 4.71e-09 5.03e-09
ft1235 128 24 24 /filmem = /type = f_excit /indm = 1/isel = 2
10.00000 100.00000
1.00e+01 1.00e+02 1.00e+03 1.00e+04 1.00e+05 1.00e+06 3.00e+06 1.00e+07
3.00e+07 1.00e+08 3.00e+08 1.00e+09 3.00e+09 1.00e+10 3.00e+10 1.00e+11
3.00e+11 1.00e+12 3.00e+12 1.00e+13 3.00e+13 1.00e+14 3.00e+14 1.00e+15
4.31e-02 6.03e-02 8.62e-02 1.29e-01 1.72e-01 2.59e-01 4.31e-01 6.03e-01
8.62e-01 1.29e+00 1.72e+00 2.59e+00 4.31e+00 6.03e+00 8.62e+00 1.29e+01
1.72e+01 2.59e+01 4.31e+01 6.03e+01 8.62e+01 1.29e+02 1.72e+02 2.59e+02
7.95e-14 5.90e-14 5.27e-14 7.86e-14 1.12e-13 1.56e-13 1.68e-13 1.47e-13
.
.
.
1.28e-14 8.71e-15 6.27e-15 3.54e-15 2.15e-15 2.51e-15 4.70e-15 1.01e-14
-----
c
c
c envelope feature photon emissivity coefficients:
c
c information
c -----
c
c nuclear charge = 54
c ion charge + 1 = 11
c
c specific ion file : /home/adas/adas/adf04/copmm#54/ls#xe10.dat
c expansion file : no projection data was used in this case
c
c no ionisation data has been included
c
c options : lnorm=T lpset=F lzset=F lionsel=T
c lhset=F lrset=F lisset=F lnset =F
c
c population processing code: adas810
c
c
c isel iwvrg wavelength range (ang) type metastable imet nmet ip
c ---- ---- - - - - - - - - - - - - - - - - - - - - - - - - - -
c 1. 1. 100.00000 - 1000.00000 f_excit t 1
c 2. 2. 10.00000 - 100.00000 f_excit t 1
c
c
c code : adas810

```

c producer : h.p. summers
c date : 05/03/2002

c

c