ADF21: effective beam stopping coefficients

Provides total beam stopping rate coefficients. These are stored as 1 and 2-dimensional scans from reference plasma conditions. Formatting conventions and variable storage are given below.

Utilising subroutines :

ADAS304

Formatted files to ADF21 specification :

Database Status Date = January,12 1999 Data type = bms files Data root =/.../adas/adas/adf21/

Beam element	*Plasma species*	*Library*	*Sub-library*	*Comments*	*Quality*
h	b5,be4,c6,h1,he2,	bms93#h		Generated by ADAS310	medium
	n7,ne10,o8				
	h1,he2,li3,be4,b5,c6	bms97#h		Generated by ADAS310	high
	n7,o8,f9,ne10				
he	b5,be4,c6,h1,he2,	bms93#he		See note 1.	medium
	n7,ne10,o8				
	h1,he2,li3,be4,b5,c6,	bms99#he_fast	gcrc<i><j>	Generated by ADAS311	high
	n7,o8,f9,ne10				
	h1,he2,li3,be4,b5,c6,	bms99#he_slow	gcrc<i><j>	Generated by ADAS311	high
	n7,o8,f9,ne10				

Notes:

1. The helium stooping data is valid at zero density only. The dataset contains placeholders for insertion of finite density stopping data in the future.
2. Generalised collisional radiative coefficients with $1s^2\ ^1S$, $1s2s\ ^1S$, $1s2s\ ^3S$ as metastables. <i><j> corresponds to the effective rate coefficient j--> i.
3. ‘Fast’ helium data is based on a beam reference energy at 50 keV/amu. ‘Slow’ helium data is based on a beam reference energy of 10 keV/amu.

Data lines : *Format:*

```
ZT, SVREF, SPEC, DATE, CODE
NEB, NDT, TREF
(EB(IEB), IEB=1,NEB)
(DT(IDT), IDT=1,NDT)
for IDT = 1 to NDT
        (SV(IEB,IDT), IEB=1,NEB)
repeat
TT, EREF, DREF
TT(ITT), ITT=1,NTT)
SVT(ITT), ITT=1,NTT)
```

variable identification :

name	*meaning*
ZT	charge of target ion
SVREF	beam stopping coefft. at reference beam energy, target density and temperature
SPEC	specification of target (text) (eg. BE)
DATE	date of calculation
CODE	name of source computer code for calculation
NEB	number of beam energies
NDT	number of target densities
TREF	reference target temperature (eV)
EB()	beam energies (eV/amu)
DT()	target densities (cm-3)
SV(,)	beam stopping coefficient (cm3 s-1) at reference temp.

1st parameter - beam energy

2nd parameter - target density

NTT	number of target temperatures
EREF	reference beam energy (eV/amu)
DREF	reference target density (cm-3)
TT()	target temperatures (eV)
SVT()	beam stopping coefficient (cm3 s-1) at reference beam energy and target density

Table B21c - example.

```
    9 /SVREF=1.798E-07 /SPEC=F  /DATE=19/03/97 /CODE=ADAS310
-------------------------------------------------------------------------------
   25   25 /TREF=2.000E+03
-------------------------------------------------------------------------------
 5.000E+03 1.000E+04 1.500E+04 2.000E+04 2.500E+04 3.000E+04 3.500E+04 4.000E+04
 4.500E+04 5.000E+04 5.500E+04 6.000E+04 6.500E+04 7.000E+04 7.500E+04 8.000E+04
 8.500E+04 9.000E+04 9.500E+04 1.000E+05 1.050E+05 1.100E+05 1.150E+05 1.200E+05
 1.250E+05
 1.000E+12 2.000E+12 3.000E+12 5.000E+12 6.000E+12 7.000E+12 8.000E+12 9.000E+12
 1.000E+13 2.000E+13 3.000E+13 5.000E+13 6.000E+13 7.000E+13 8.000E+13 9.000E+13
 1.000E+14 2.000E+14 3.000E+14 5.000E+14 6.000E+14 7.000E+14 8.000E+14 9.000E+14
 1.000E+15
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