ADF27: driver data-sets for ADAS701 calculations

Provides driver datasets for ADAS701 dielectronic calculations. A number of distinct driver collections are required tuned to ADF09, ADF04 and autoionisation supplementation of ADF25. Within the collection of drivers for ADF09 production, it is convenient to distinguish the general structure calculations from the radiative and Auger rate calculations. Some details of the data file nomenclatures are given in the notes below. ADAS701 is a complex fundamental atomic calculation. A more complete background to the code and the parameters which control it are given in the manual entry for ADAS701 and also in the ADAS and Atomic Calculation Winter School lectures and tutorials.

Utilising subroutines :

ADAS701

Formatted files to ADF27 specification :

Database Status Date = March 17, 2003 Data type = ADAS701 drivers Data root = /.../adas/adas/adf27/

sequence	*libraries*	*Members*	*elements*	*Comments*
H-like	hlike/mom93#h	<ion>ls<type>.dat	c,n,ne	LS-coupled DR rate calculation
		<ion>ls_str.dat	c,n,ne	LS-coupled structure calculation
	hlike/nrb00#h	<ion>ls<type>.dat	extended element range	LS-coupled DR rate calculation
		<ion>ls_str.dat	extended element range	LS-coupled structure calculation
		<ion>ic<type>.dat	extended element range	IC-coupled DR calculation
		<ion>ic_str.dat	extended element range	IC-coupled structure calculation
He-like	helike/mom93#he	<ion>ls<type>.dat	c,n,ne	LS-coupled DR rate calculation
		<ion>ls_str.dat	c,n,ne	LS-coupled structure calculation
	helike/mb00#he	<ion>ls<type>.dat	extended element range	LS-coupled DR rate calculation
		<ion>ls_str.dat	extended element range	LS-coupled structure calculation
		<ion>ic<type>.dat	extended element range	IC-coupled DR calculation
		<ion>ic_str.dat	extended element range	IC-coupled structure calculation
Li-like	lilike/mom93#li	<ion>ls<type>.dat	c,n	LS-coupled DR rate calculation
		<ion>ls_str.dat	c,n	LS-coupled structure calculation
	lilike/jc00#li	<ion>ic<type>.dat	extended element range	IC-coupled DR calculation
		<ion>ic_str.dat	extended element range	IC-coupled structure calculation
Be-like	belike/mom93#be	<ion>ls<type>.dat	c,n,ne	LS-coupled DR rate calculation

		<ion>ls_str.dat	c,n,ne	LS-coupled structure calculation
	belike/jc00#be	<ion>ic<type>.dat	extended element range	IC-coupled DR calculation
		<ion>ic_str.dat	extended element range	IC-coupled structure calculation
B-like	blike/mom93#b	<ion>ls<type>.dat	c,n,ne,o	LS-coupled DR rate calculation
		<ion>ls_str.dat	c,n,ne,o	LS-coupled structure calculation
		<ion>ic_aut.dat	c,n,ne,o	IC-coupled spin breakdown Auger calculation
C-like	clike/mom93#c	<ion>ls<type>.dat	c,n,ne,o	LS-coupled DR rate calculation
		<ion>ls_str.dat	c,n,ne,o	LS-coupled structure calculation
		<ion>ic_aut.dat	c,n,ne,o	IC-coupled spin breakdown Auger calculation
N-like	nlike/mom93#n	<ion>ls<type>.dat	n,ne,o	LS-coupled DR rate calculation
		<ion>ls_str.dat	n,ne,o	LS-coupled structure calculation
		<ion>ic_aut.dat	n,ne,o	IC-coupled spin breakdown Auger calculation
O-like	olike/mom93#o	<ion>ls<type>.dat	ne,mg	LS-coupled DR rate calculation
		<ion>ls_str.dat	ne,mg	LS-coupled structure calculation
		<ion>ic_aut.dat	o	IC-coupled spin breakdown Auger calculation

Notes:
1. Autostructure runs are divided into parent transition, capturing n-shell types for economical runs. <type> distinguishes these as for example '22-2' for n=2-2 parent transition with capture to n=2; '22-n' for n=2-2 parent transition with capture to all higher n. The output is expected to be post-processed by ADAS702.
2. 'ls' indicates LS-coupled operation of Autostructure. Later drivers will include 'ic' for intermediate coupling operation.
3. 'sat' indicates that the output is expected to be post-processed by ADAS703 for satellite line population studies.
4. 'str' indicates initial structure runs for optimisation and/or selection of energy bands for autoisionsation.
5. 'aut' are drivers specifically for procuring spin breakdown autoionisation rates for use by ADAS204 population calculations.

Data lines : *Format:*

The structure of these files is described in detail in the ADAS701 manual description.