

1 ASP Facts

In all laws except for the inertial law, all fluents f will be replaced as follows.

- single fluent " f " replaced by
val(f ,true)
- negated single fluent " $\neg f$ " replaced by
val(f ,false)
- fluent with assignment " f =identifier" replaced by
val(f ,identifier)

Here is a translation scheme for BC into ASP facts. Uppercase letters (A,B,C) represent lists of fluents (/ actions in the after law), which consist of a_1 , a_2 , a_3 , etc.

- ' $\langle \text{action} \rangle$ ' A
action(a_1).
action(a_2).
- ' $\langle \text{fluent} \rangle$ ' A
fluent(a_1).
fluent(a_2).
- ' $\langle \text{defined fluent} \rangle$ ' A
defined_fluent(a_1).
defined_fluent(a_2).
- a ' $\langle \text{if} \rangle$ ' B ' $\langle \text{ifcons} \rangle$ ' C
static_law(1).
head(1,a).
if(1,b_1).
if(1,b_2).
ifcons(1,c_1).
ifcons(1,c_2).
- A ' $\langle \text{after} \rangle$ ' B ' $\langle \text{ifcons} \rangle$ ' C
dynamic_law(2).
head(2,a).
after(2,b_1).
after(2,b_2).
ifcons(2,c_1).
ifcons(2,c_2).
- ' $\langle \text{default} \rangle$ ' f
default(f).
- ' $\langle \text{inertial} \rangle$ ' f
inertial(f).
- ' $\langle \text{impossible} \rangle$ ' B
impossible(5,b_1).
impossible(5,b_2).

- '<nonexecutable>' B ['<if>' C]
nonexecutable(6,b_1).
nonexecutable(6,b_2).
nonexecutable(6,c_1).
nonexecutable(6,c_2).