

battery_vsrc.ebe

Attributes

```
ebe name=battery_vsrc x_inputs=yes
# voltage source element for battery modeling
# Reference:
#   Chen and Rincon-Mora,
#   "Accurate Electrical Battery Model Capable of Predicting Runtime
#   and I-V Performance,"
#   IEEE Transactions on energy conversion, vol. 21, June 2006.
Jacobian: variable
nodes: p n
state_vars:
aux_vars: cur_p
aux_vars_startup: cur_p_s
x_vars: soc
iparms:
sparms:
rparms:
+ a0=3.7
+ a1=0.2
+ a2=-0.1
+ a3=0.3
+ b0=-1
+ b1=35
stparms:
igparms:
outparms: i v
```

Description

battery_vsrc.ebe, along with battery_c.ebe and battery_r.ebe are used to make up the battery model (sub-circuit s_battery_1) described in the following reference. It is a voltage source whose voltage value depends on the variable soc.

Reference:

M. Chen and G.A. Rincon-Mora, "Accurate electrical battery model capable of predicting runtime and IV performance," *IEEE transactions on energy conversion*, vol. 21, pp. 504-511, 2006.