

ngspice

```
.options gmin=1e-15 abstol=10f
.option savecurrents
vss vss 0 0
vpref vref 0 60
Vin in vref dc 0 ac 0.25 sin(0 55 1)
.control
save all
op
write direct_neuron.op.raw
*dc vpressure 0.01 120 0.1
tran 10u 2 10u
write direct_neuron.raw
wdata direct_neuron.spikes.csv vmem
wdata direct_neuron.pressure.csv in
*plot -all.Vres#branch
plot v(in)
plot Vmeas#branch
plot Vineuron#branch
plot Vmeas#branch/Vineuron#branch
plot vmem Vna Vk
*plot all.vdd_meas#branch*all.vdd
.endc
```

TT_MODELS

