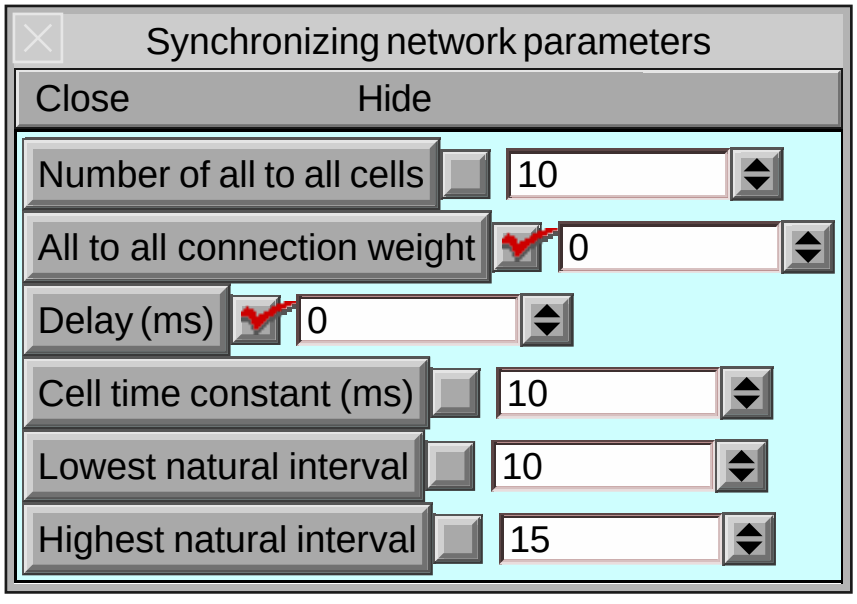
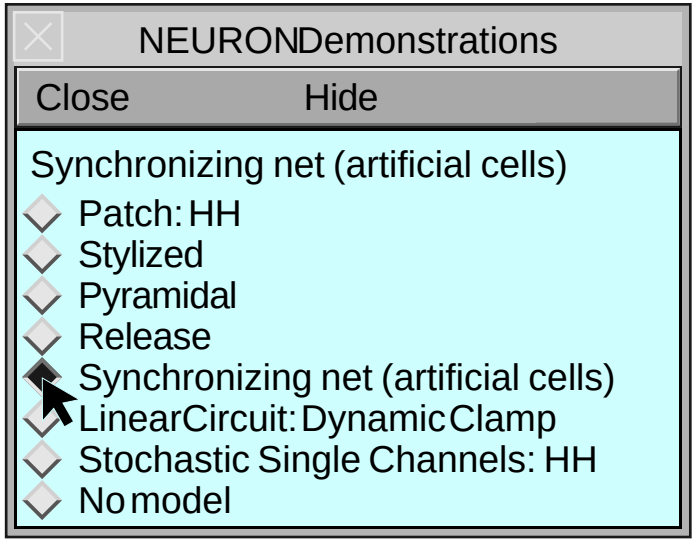
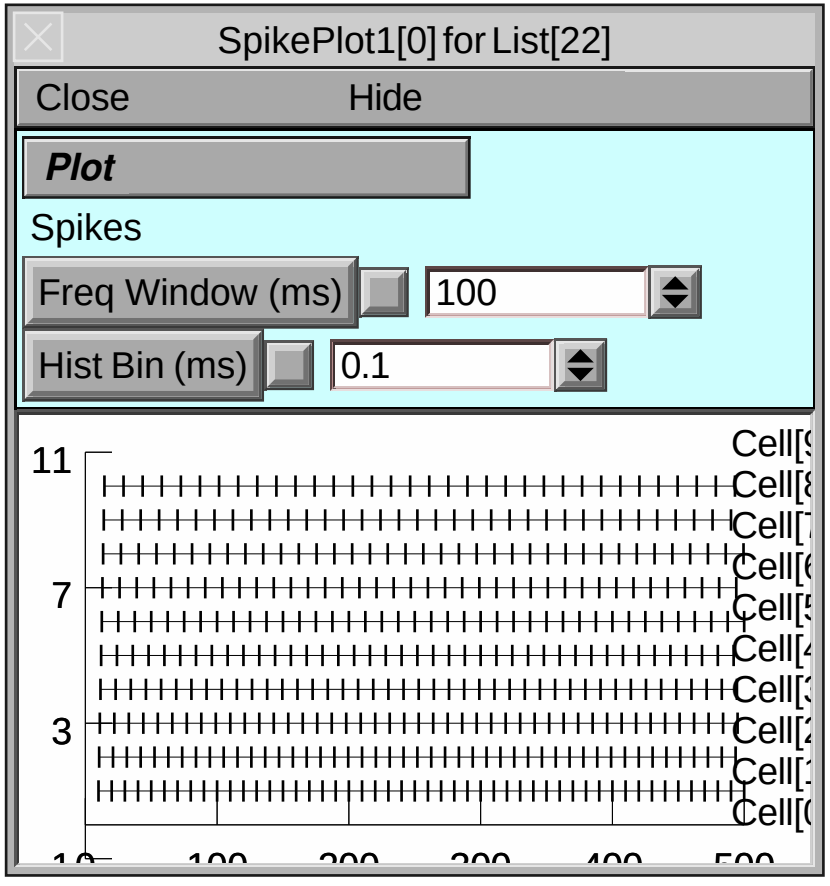

Synchronizing network parameters
Close
Hide
Number of all to all cells
10
All to all connection weight
0
Delay (ms)
0
Cell time constant (ms)
10
Lowest natural interval
10
Highest natural interval
15


NEURONDemonstrations
Close
Hide
Synchronizing net (artificial cells)
Patch: HH
Stylized
Pyramidal
Release
Synchronizing net (artificial cells)
LinearCircuit: Dynamic Clamp
Stochastic Single Channels: HH
No model


SpikePlot1[0] for List[22]
Close
Hide
Plot
Spikes
Freq Window (ms)
100
Hist Bin (ms)
0.1
11
7
3

Synchronizing network parameters

Close Hide

Number of all to all cells 10

All to all connection weight -0.3

Delay (ms) 0

Cell time constant (ms) 10

Lowest natural interval 10

Highest natural interval 15

SpikePlot1[0] for List[22]

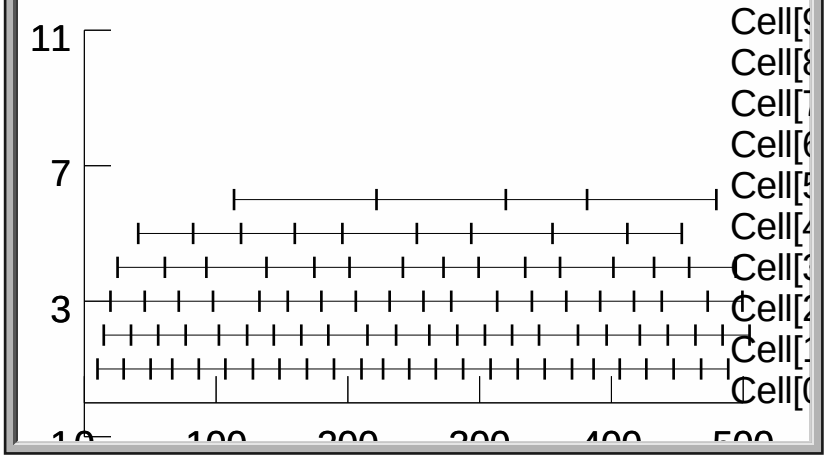
Close Hide

Plot

Spikes

Freq Window (ms) 100

Hist Bin (ms) 0.1



Synchronizing network parameters

Close Hide

Number of all to all cells	10
All to all connection weight	-0.3
Delay (ms)	4
Cell time constant (ms)	10
Lowest natural interval	10
Highest natural interval	15

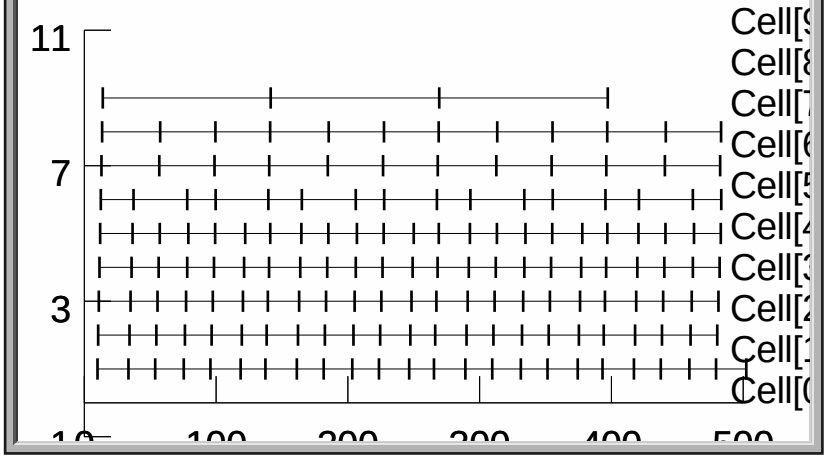
SpikePlot1[0] for List[22]

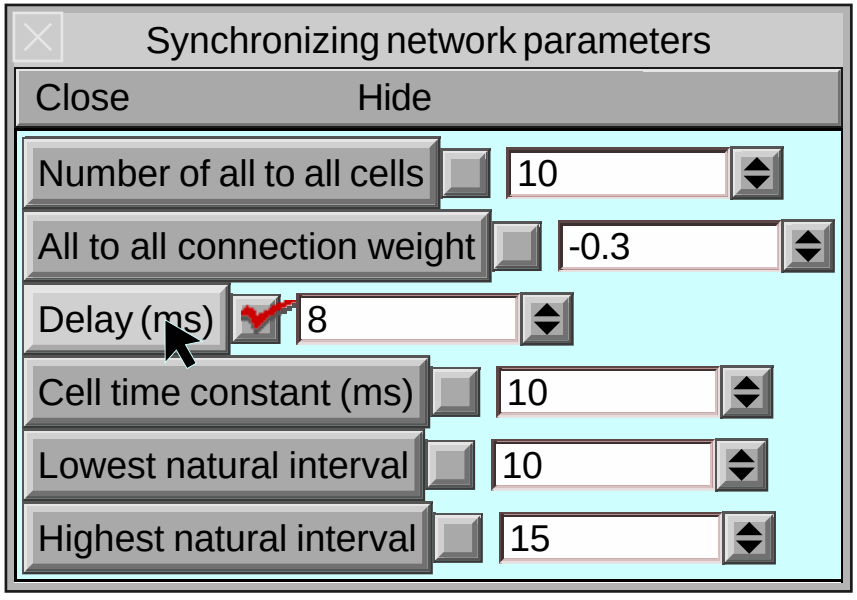
Close Hide

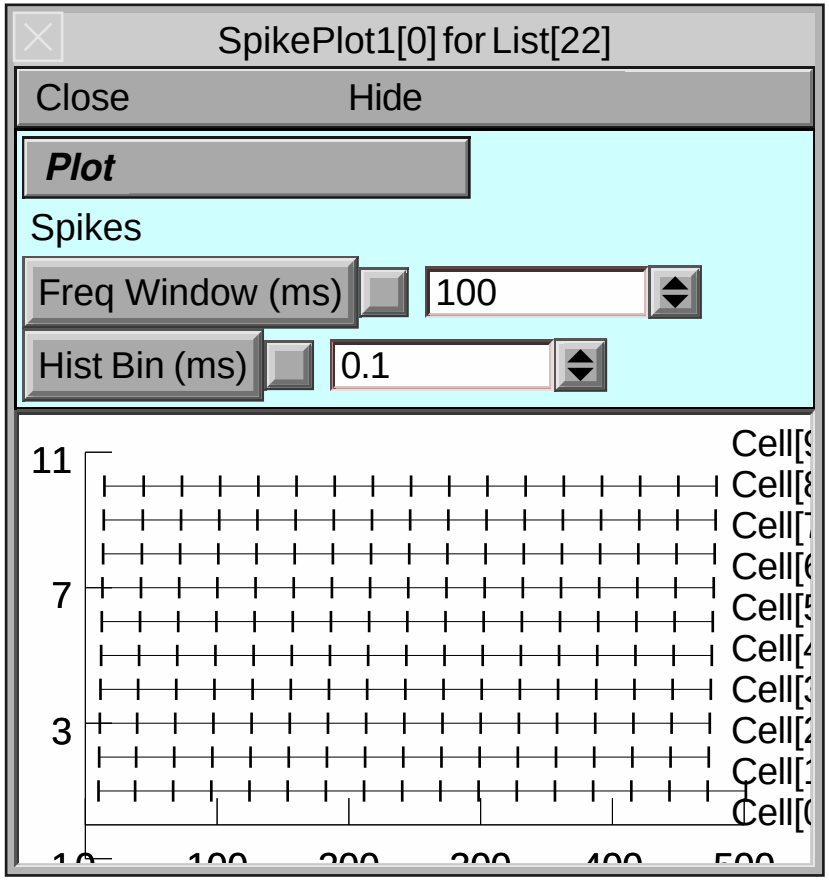
Plot

Spikes

Freq Window (ms)	100
Hist Bin (ms)	0.1




Synchronizing network parameters
Close
Hide
Number of all to all cells
10
All to all connection weight
-0.3
Delay (ms)
8
Cell time constant (ms)
10
Lowest natural interval
10
Highest natural interval
15

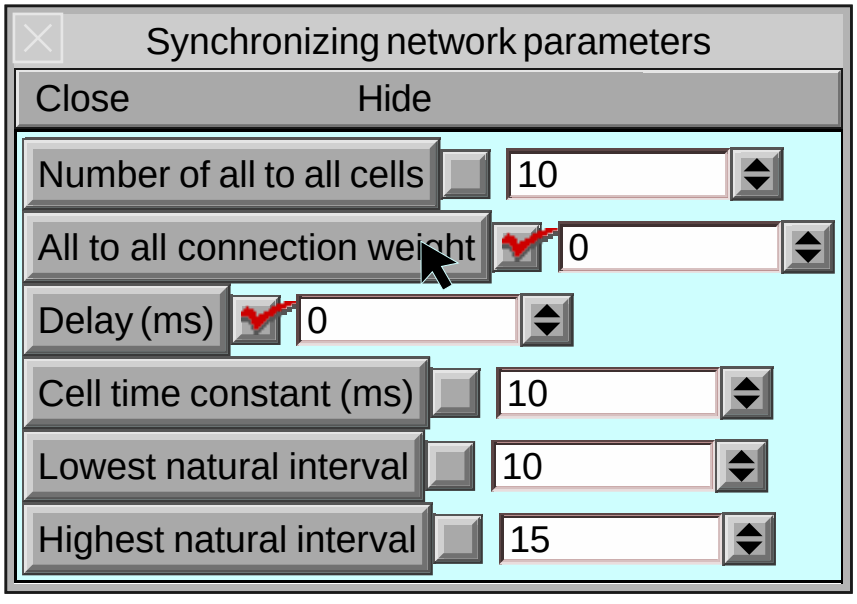

SpikePlot1[0] for List[22]
Close
Hide
Plot
Spikes
Freq Window (ms)
100
Hist Bin (ms)
0.1
11
7
3
Cell[
Cell[
Cell[
Cell[
Cell[
Cell[
Cell[
Cell[
Cell[

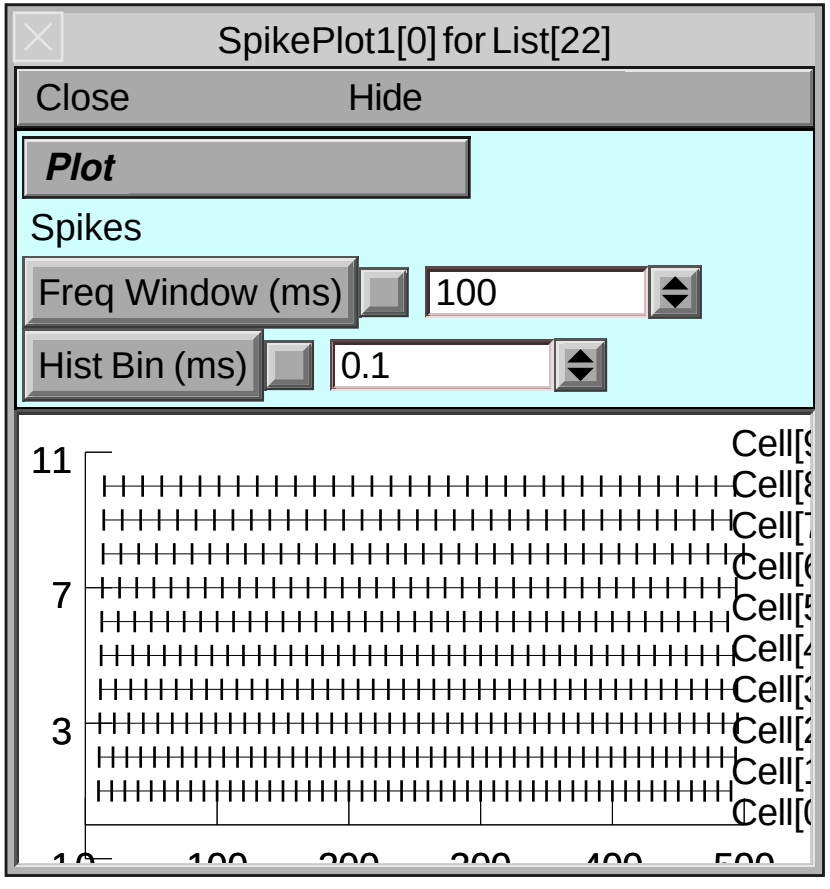
```
NEURON {
  ARTIFICIAL_CELL IntervalFire
  RANGE tau, m, invl
  : m plays the role of voltage
}

: dm/dt = (minf − m)/tau
: input event adds w to m
: when m = 1, or event makes m >= 1 cell fires
: minf is calculated so that the natural
: interval between spikes is invl
```

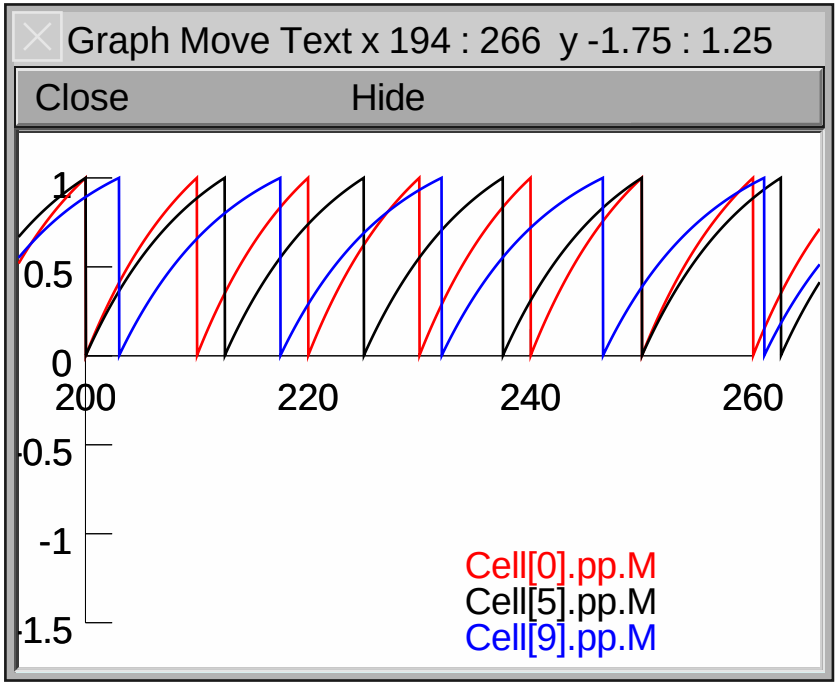
```
INITIAL {
  minf = 1/(1 − exp(−invl/tau))
  m = 0
  t0 = t
  net_send(firetime(), 1)
}

FUNCTION M() {
  M = minf + (m − minf)*exp(−(t − t0)/tau)
}

FUNCTION firetime()(ms) { : m < 1 and minf > 1
  firetime = tau*log((minf−m)/(minf − 1))
}
```

```
NET_RECEIVE (w) {
  m = M()
  t0 = t
  if (flag == 0) {
    m = m + w
    if (m > 1) {
      m = 0
      net_event(t)
    }
    net_move(t+firetime())
  }else{
    net_event(t)
    m = 0
    net_send(firetime(), 1)
  }
}
```

```
objref cells, nclist
{cells = new List()  nclist = new List()}

proc createnet() {local i, j
  ncell = $1
  nclist.remove_all()
  cells.remove_all()
  for i=0, ncell−1 {
    cell_append(new Cell(), i, 0, 0)
  }
  for i=0, ncell−1 for j=0, ncell−1 if (i != j) {
    nc_append(i, j, −1, 0, 1)
  }
}
```


Synchronizing network parameters
Close
Hide
Number of all to all cells
10
All to all connection weight
0
Delay (ms)
0
Cell time constant (ms)
10
Lowest natural interval
10
Highest natural interval
15


SpikePlot1[0] for List[22]
Close
Hide
Plot
Spikes
Freq Window (ms)
100
Hist Bin (ms)
0.1
11
7
3
Cell[9]
Cell[8]
Cell[7]
Cell[6]
Cell[5]
Cell[4]
Cell[3]
Cell[2]
Cell[1]
Cell[0]


Graph Move Text x 194 : 266 y -1.75 : 1.25
Close
Hide
1
0.5
0
-0.5
-1
-1.5
200
220
240
260
Cell[0].pp.M
Cell[5].pp.M
Cell[9].pp.M

Synchronizing network parameters

Close Hide

Number of all to all cells 10

All to all connection weight -0.3

Delay (ms) 0

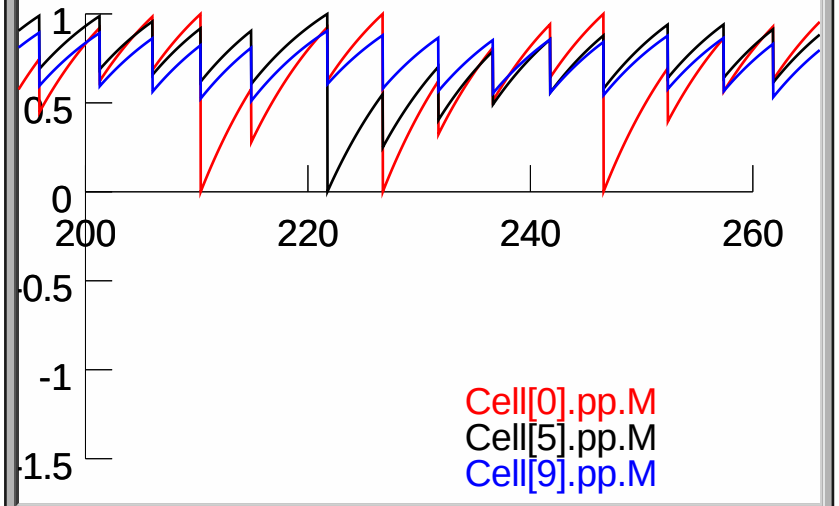
Cell time constant (ms) 10

Lowest natural interval 10

Highest natural interval 15

Graph Move Text x 194 : 266 y -1.75 : 1.25

Close Hide



SpikePlot1[0] for List[22]

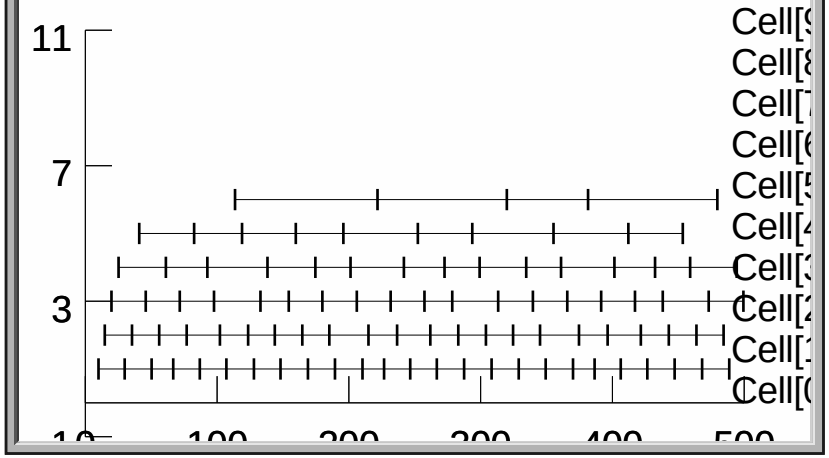
Close Hide

Plot

Spikes

Freq Window (ms) 100

Hist Bin (ms) 0.1



Synchronizing network parameters

Close Hide

Number of all to all cells	10
All to all connection weight	-0.3
Delay (ms)	4
Cell time constant (ms)	10
Lowest natural interval	10
Highest natural interval	15

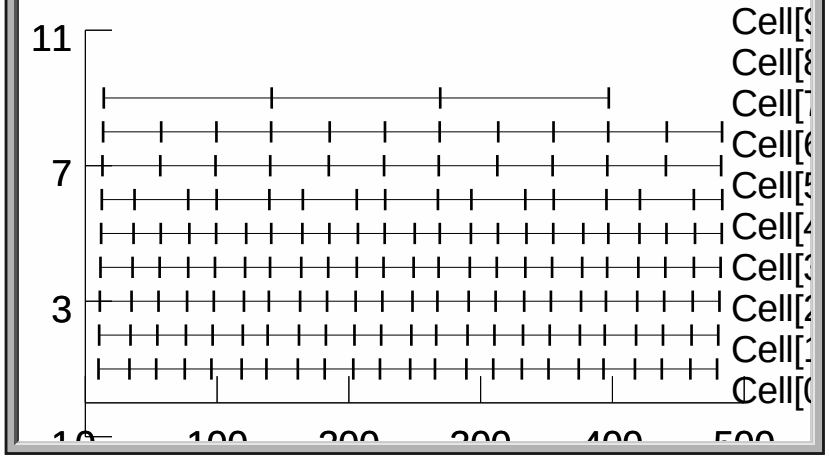
SpikePlot1[0] for List[22]

Close Hide

Plot

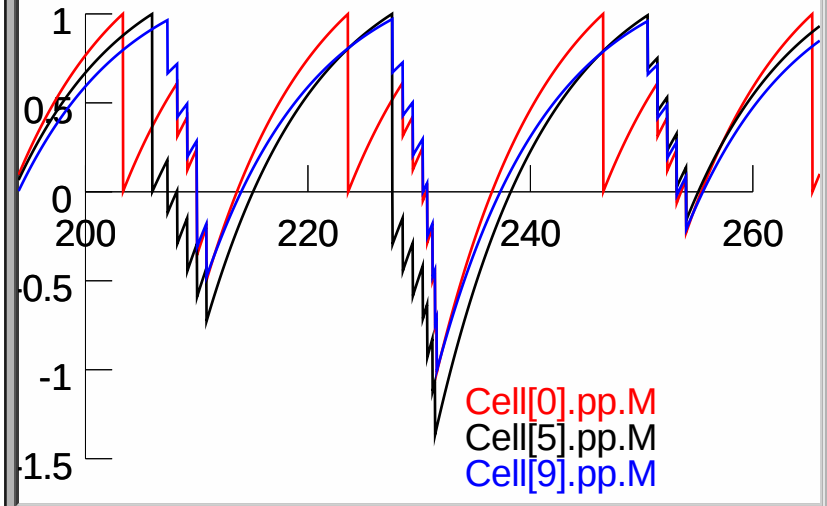
Spikes

Freq Window (ms)	100
Hist Bin (ms)	0.1



Graph Move Text x 194 : 266 y -1.75 : 1.25

Close Hide



Synchronizing network parameters

Close Hide

Number of all to all cells	10
All to all connection weight	-0.3
Delay (ms)	8
Cell time constant (ms)	10
Lowest natural interval	10
Highest natural interval	15

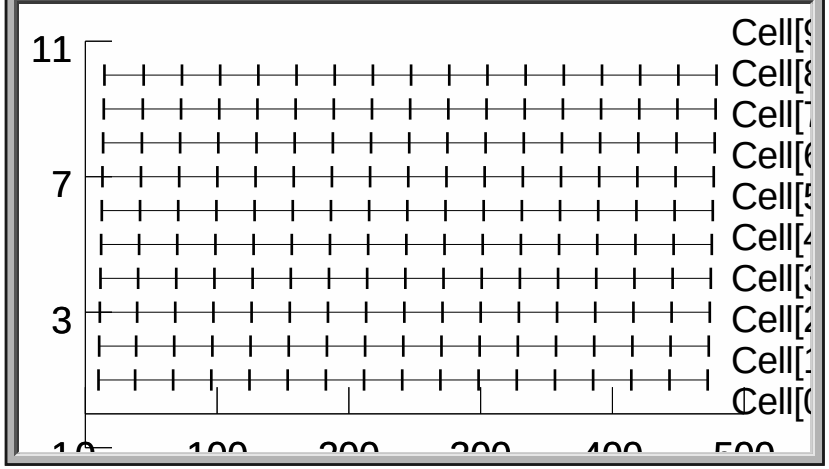
SpikePlot1[0] for List[22]

Close Hide

Plot

Spikes

Freq Window (ms)	100
Hist Bin (ms)	0.1



Graph Move Text x 194 : 266 y -1.75 : 1.25

Close Hide