EPSP.m - SciTE

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```
%% Synaptic conductance model to simulate an EPSP
clear; clf; hold on;

%% Setting some constants and initial values
c_m=1; g_L=1; tau_syn=1; E_syn=10; delta_t=0.01;
g_syn(1)=0; I_syn(1)=0; v_m(1)=0; t(1)=0;

%% Numerical integration using Euler scheme
for i=2:10/delta_t
  t(i)=t(i-1)+delta_t;
  if abs(t(i)-1)<0.001; g_syn(i-1)=1; end
  g_syn(i)= g_syn(i-1) - delta_t/tau_syn * g_syn(i-1);
  I_syn(i)= g_syn(i) * (v_m(i-1)-E_syn);
  v_m(i) = v_m(i-1) - delta_t/c_m *g_L* v_m(i-1) ...
           - delta_t/c_m * I_syn(i);
end

%% Plotting results
plot(t,v_m); plot(t,g_syn*5,'r--'); plot(t,I_syn/5,'k:')
```

li=1 co=1 INS (CR+LF)

Octave

```
GNU Octave, version 3.0.1
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Octave was configured for "i686-pc-msdosmsvc".

Additional information about Octave is available at http://www.octave.org.

Please contribute if you find this software useful.
For more information, visit http://www.octave.org/help-wanted.html

Report bugs to <bug@octave.org> (but first, please read
http://www.octave.org/bugs.html to learn how to write a helpful report).

For information about changes from previous versions, type `news'.

 - Use `pkg list' to see a list of installed packages.
 - SciTE editor installed. Use `edit' to start the editor.
 - MSYS shell available (C:\Program Files\Octave\msys).
 - Graphics backend: jhandles.

octave-3.0.1.exe:1> cd
octave-3.0.1.exe:2> cd Desktop/Chapter2/Octave
octave-3.0.1.exe:3> edit
octave-3.0.1.exe:4> EPSP
octave-3.0.1.exe:5>
```

Figure 1.0