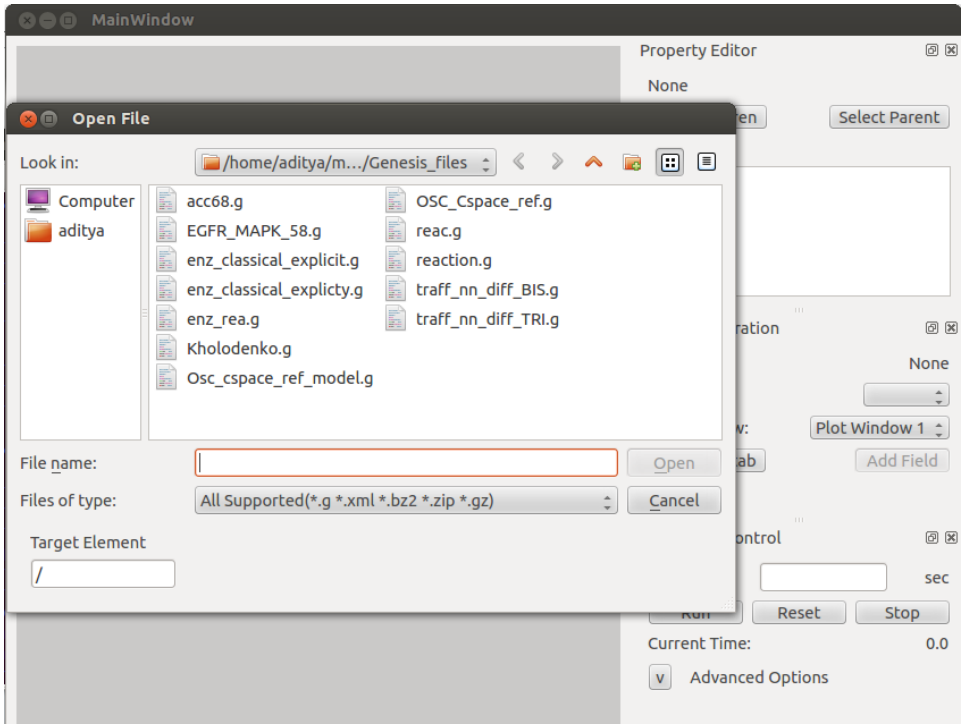
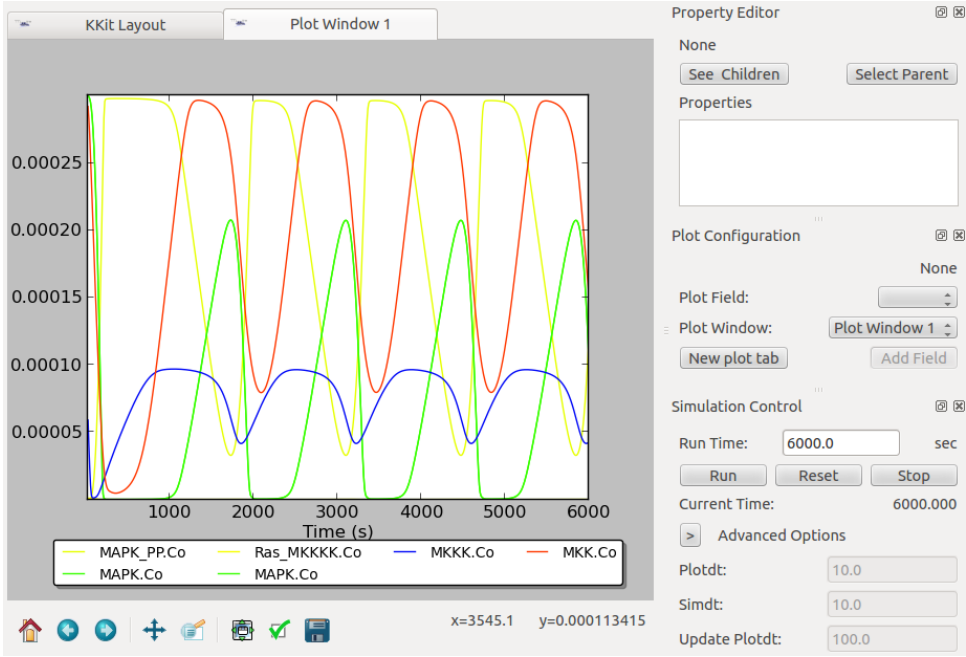
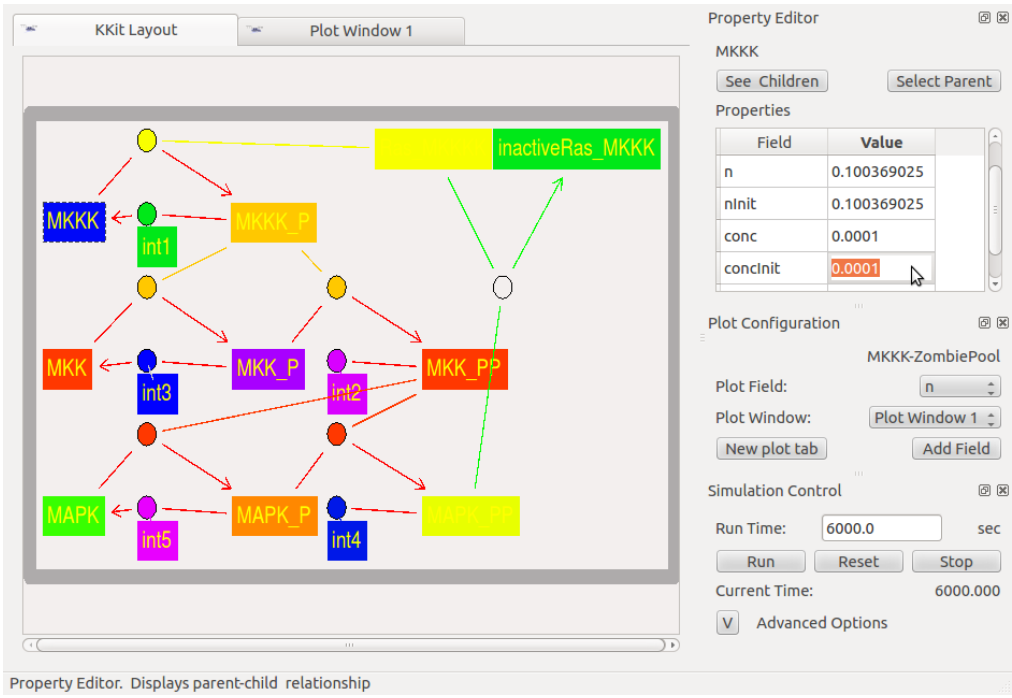
- Install MOOSE:
  - The latest MOOSE is currently packaged as an Ubuntu liveCD/USB. Burn livecd.iso to CD or make bootable USB using Startup Disk Creator (usb-creator-gtk) on Ubuntu 12.04. Boot off it, on your machine, or using virtualbox.org. User:moose, passwd:moose.
- Quick start MOOSE:
  - Double click desktop icon to launch GUI.
  - 'File'→'Load Model' (top menu), navigate to /home/moose/moose_src/Demos/Genesis_files .
  - Open any .g file there, say Kholodenko.g .
  - The signalling network schematic appears.
  - Click the 'Plot Window 1' tab to show plots.
  - Click run, and the plots are updated as the simulation proceeds.
  - You can 'stop' a simulation in-between and 'run' again for another 'Run Time'. 'Reset' and 'run' to start from t=0.
  - Buttons below the plots allow you to pan, zoom, and save the plot figure. Home and arrow icons to switch between views.
  - In 'advanced options', you can set the sim time step 'simdt' and plot resolution 'plotdt'. Also the 'Update Plotdt' at which the GUI plots are refreshed. Units: seconds.

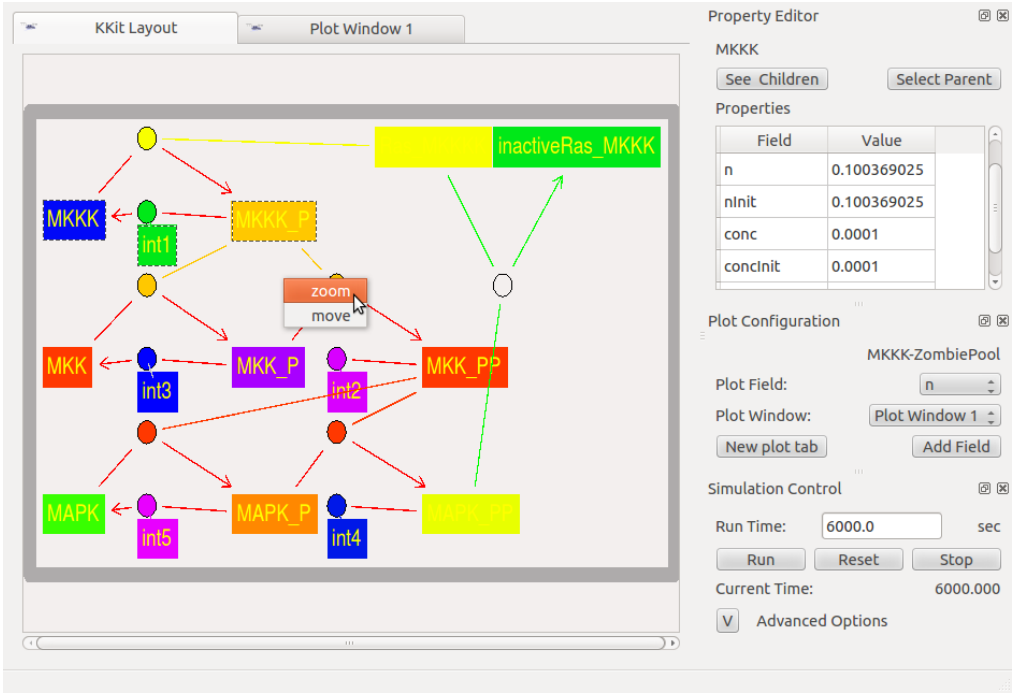




- Changing Parameters:
  - All units are in SI.
  - Switch to the KKit Layout tab
  - You can see/edit properties of any object in the right ‘Properties’ panel by single-click on a Molecule Pool (rectangle); or double-click on a Reaction (ellipse).
  - Reversible reactions are empty ellipses, with the reaction direction in green.
  - Enzyme-catalyzed reactions are filled ellipses, with the reaction direction in red, and the enzyme link in the enzyme pool’s colour.
  - An empty unlinked box near a filled ellipse signifies an explicit enzyme complex for an explicit enzyme reaction.
- Layout:
  - Click and drag any pool/reaction.
  - Keyboard shortcuts: ‘a’: fit full model; ‘<’,’>’: incremental zoom out/in; numpad arrow keys: pan.
  - Rubber-band select (click-and-drag) a rectangular region having a pool, which pops up a context menu to (1) zoom to selected region; or (2) move / click-and-drag the objects in the selected region.



Property Editor. Displays parent-child relationship



- Plotting:
  - In the ‘Plot Configuration’ panel, click ‘New plot tab’.
  - In the ‘KKit Layout’ tab, select an object by single-click on a Molecule Pool (rectangle); or double-click on a Reaction (ellipse).
  - All plot-able fields of the object appear in the ‘Plot Field’ dropdown. Select one and click ‘Add Field’ to add it to the newly created plot tab.
  - Similarly, more object-fields may be plotted in the same tab or in new ones.
  - Menubar→‘View’ →‘Sub Windows’/‘Tabs’ to tile the plots differently.
  - Navigate the object tree by ‘See Children’ and ‘Select Parent’ (usually not needed).
- Switching Solvers:
  - Select the ‘Solver’ from the main-menu: RungeKutta (Continuous) / Gillespie (Discrete).
  - Load the model: File→Load Model.
  - To switch solvers for the same model, first select solver, then (re-)load the model.
- Neuron / Electrical:
  - Hodgkin-Huxley Squid demo; neuron sims.