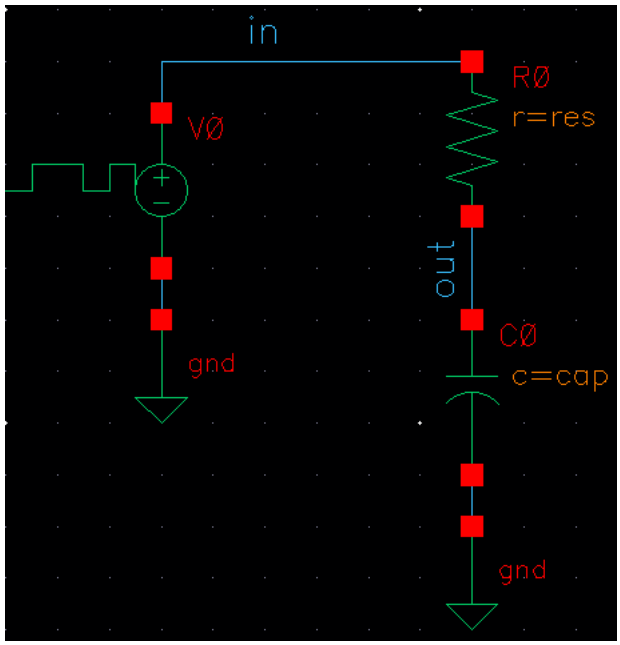
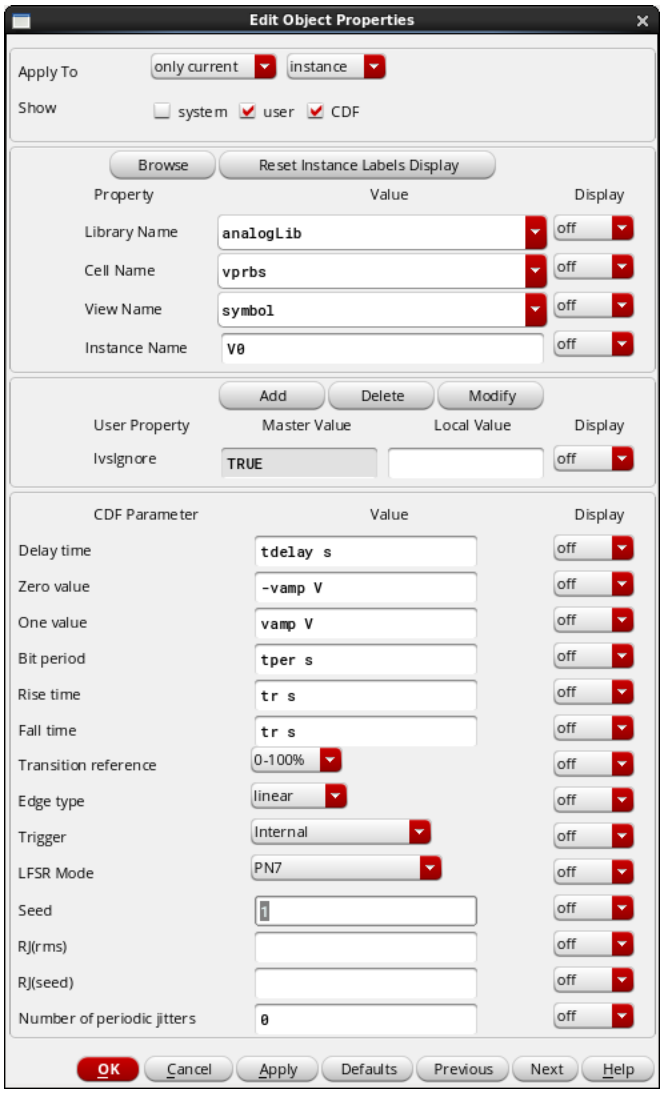
This document describes how to run transient simulation with a PRBS input data pattern, and plot the resulting eye diagram.

In this document, we will use the following simple circuit as an example:

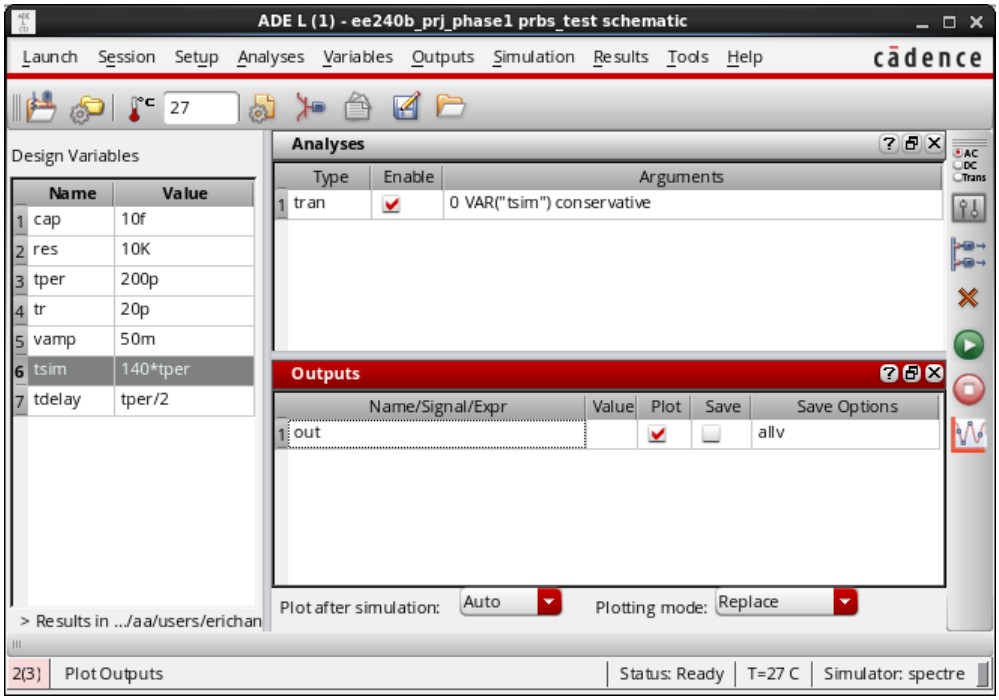


The voltage source in the schematic is a `vprbs` cell in the `analogLib` library. Its property window is displayed on the next page:

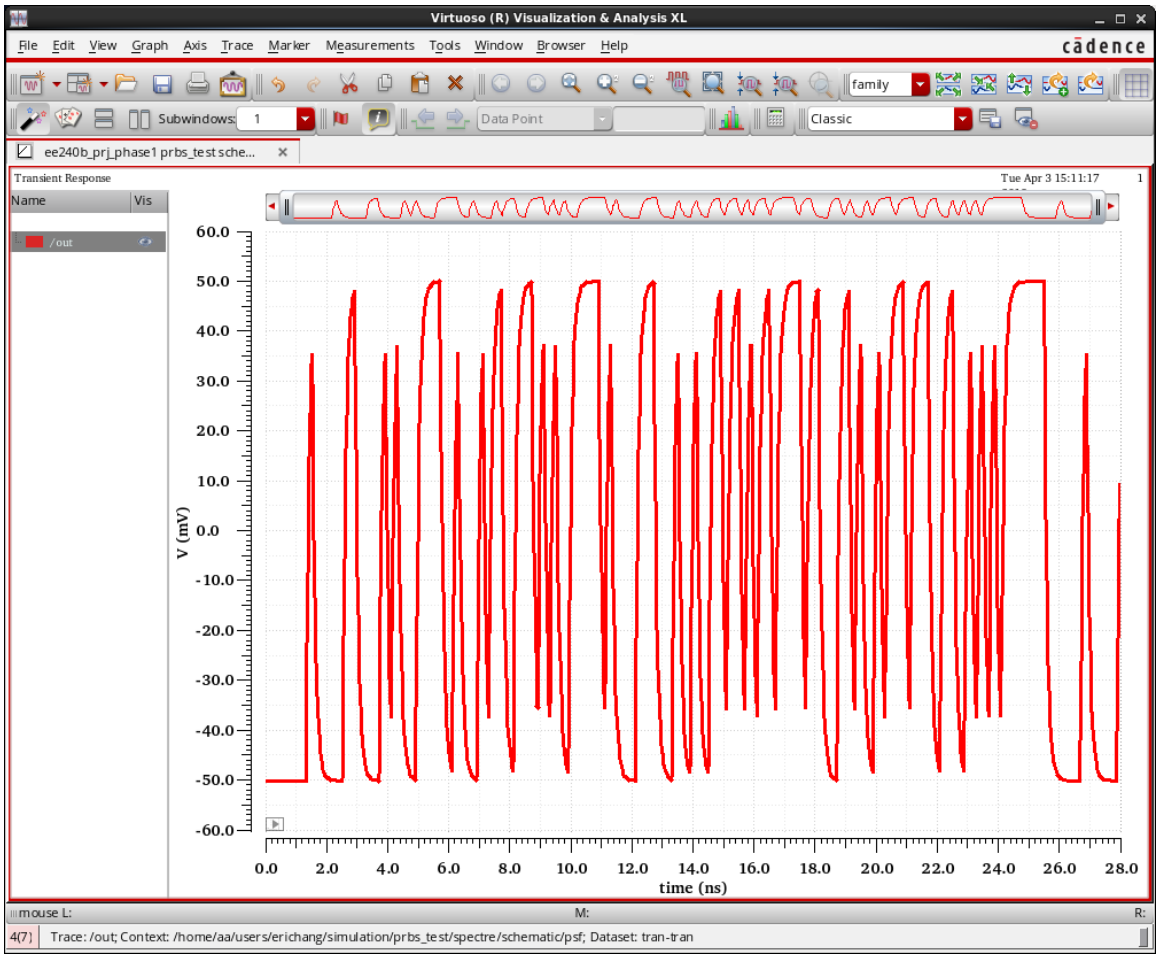


Most fields are straight forward, but make sure the “Transition reference”, “Edge type”, “Trigger”, “LFSR Mode”, and “Seed” fields are exactly as above. This makes sure everyone use the same input source setup.

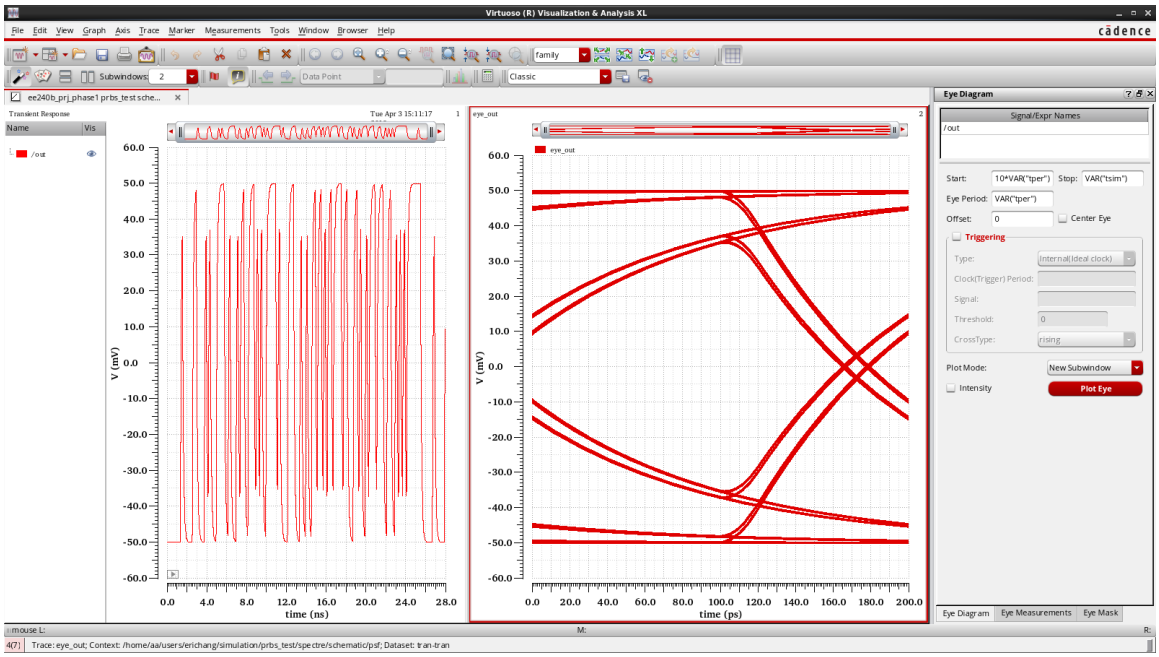
With this schematic, setup the transient simulation as shown in the next page. Note that since the PRBS7 sequence repeats every 127 bit, we simulate for 140 bit periods (so we can throw away some initial bits to avoid initial condition issues).



After setting up ADEL/ADEXL, run the simulation, and you should see the following output plot:



To plot the eye diagram in the waveform viewer, go to “Measurements” tab, and select “Eye Diagram”. A dialog form will appear, and fill in the form according to the screenshot below. Note that we truncate the first 10 bits to avoid initial condition problems. After clicking the “Plot Eye” button, the eye diagram will appear.



To measure the eye width and eye height, select the eye diagram trace, then press the “M” button. This will create a marker that you can drag around the eye traces. Then, with the marker selected, Pressing “D” button will create a new marker along with distance rulers displaying the horizontal/vertical distance.