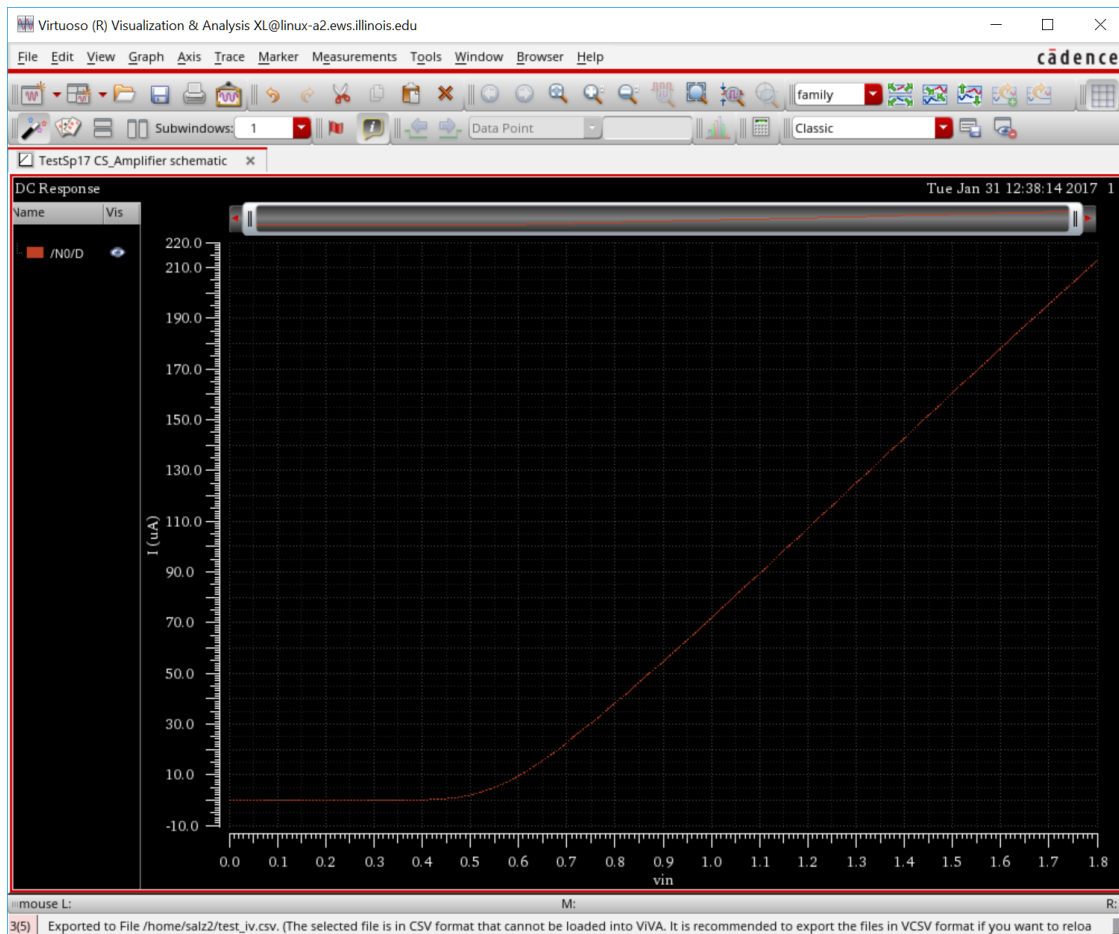


## ECE483SP17

### Spectre to MATLAB Export

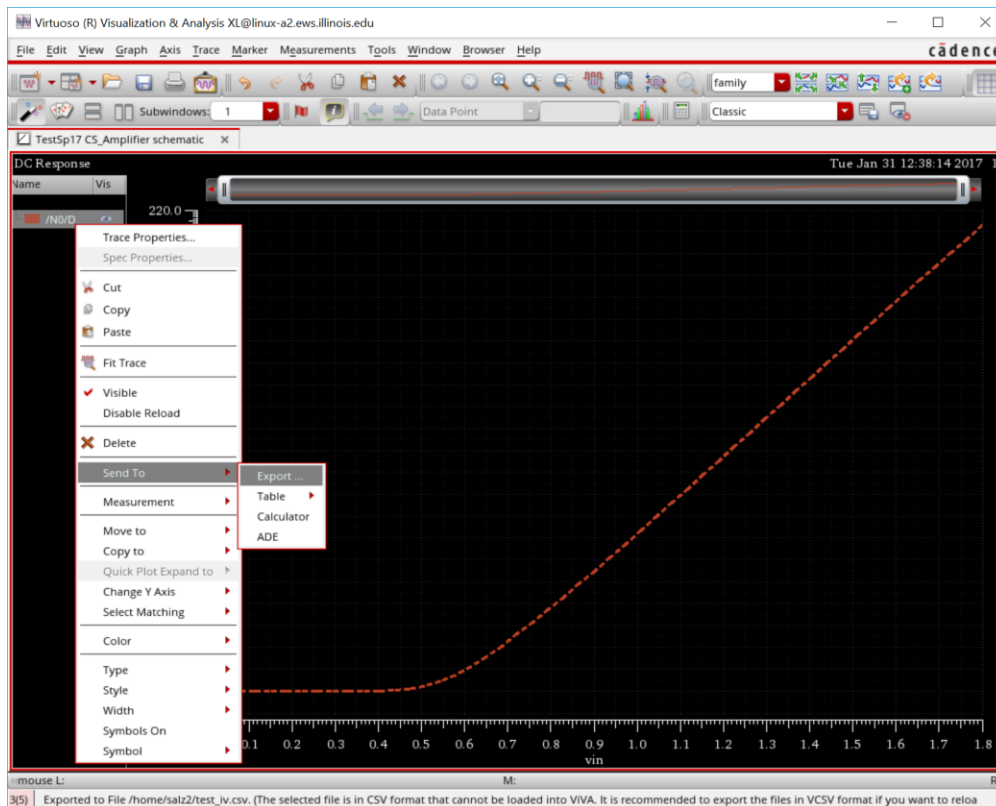
While Cadence is a great simulator, the default plotting leaves a lot to be desired. In this class, all of your plots should be created using another program (Excel, MATLAB, Python, etc). This quick guide will show you how to go from Spectre to MATLAB.

The first step is to have a simulation result. I've done a simple NMOS IV curve as an example.

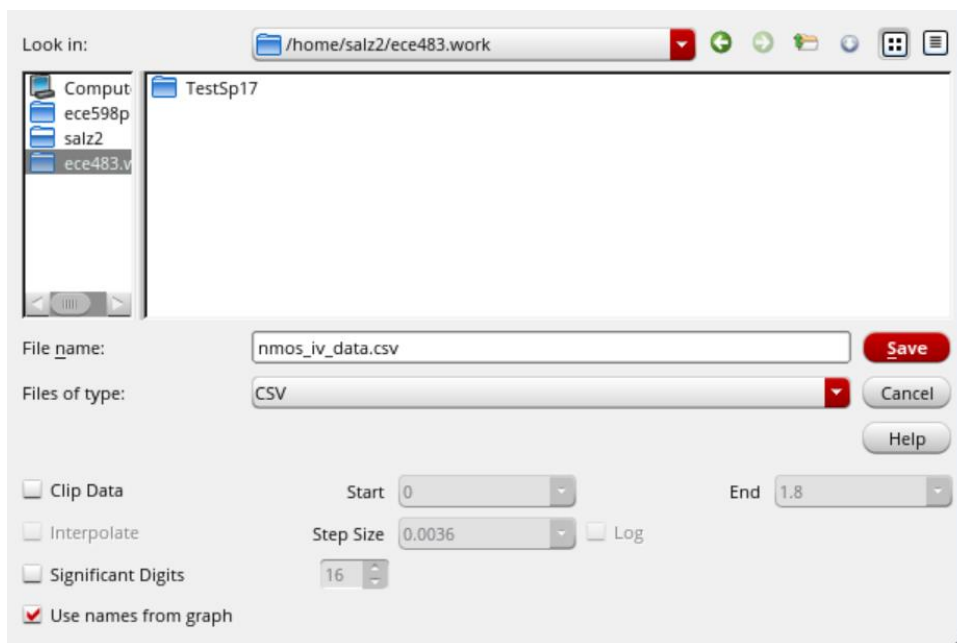


Pretty ugly! Dark line colors on dark background, too many ticks on the axis, grid too transparent. It's fairly impossible to get anything useful out of this besides the shape of the curve.

After that, we have to export our results. Do that by right clicking on the wave on the left-hand menu, then selecting Send To -> Export:



There are a couple of export options available, but we'll be using CSV for this example. Save it somewhere you can access.



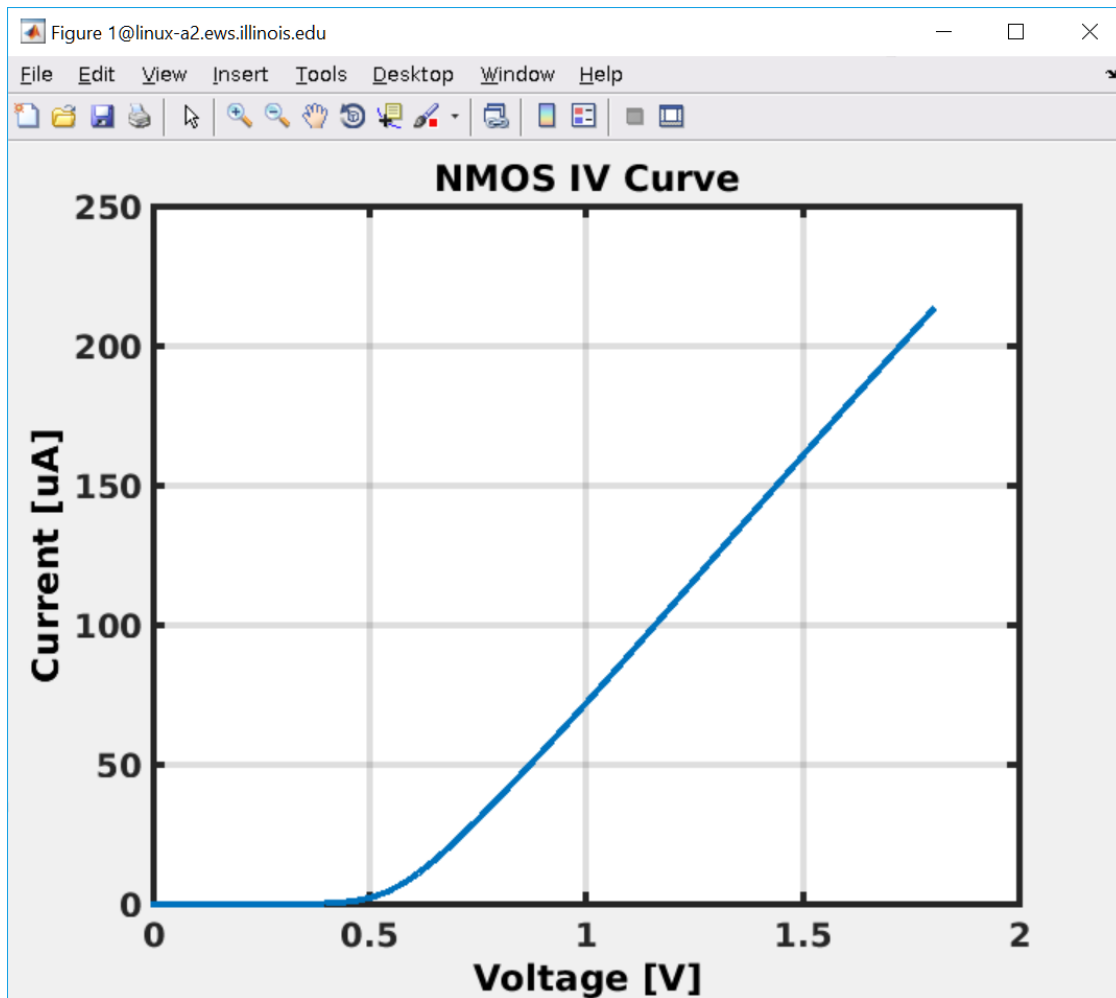
Lastly, load it up and plot. We're using MATLAB here. The data is saved as a two column array, with the first column being the x-axis, and the second column being the y-axis. I've copied the code used below:

```
% This is from startup.m (on website)
% Plot formatting
colordef white;
% Plot with default font size 16+
% Linewidth of 2 or 3
set(0,'defaultAxesFontName','Arial',...
     'defaultTextFontName','Arial',...
     'defaultAxesFontWeight','Bold',...
     'defaultTextFontWeight','Bold',...
     'DefaultTextFontSize',16,...
     'DefaultAxesFontSize',16,...
     'DefaultLineLineWidth',3.0,...
     'DefaultAxesLineWidth',3,...
     'DefaultPatchLineWidth',2,...
     'DefaultAxesXGrid','on',...
     'DefaultAxesYGrid','on');

% Loading/plotting data
data = csvread('nmos_iv_data.csv',1);
voltage = data(:,1);
current = data(:,2)*1e6;
plot(voltage, current);

xlabel('Voltage [V]');
ylabel('Current [uA]');
title('NMOS IV Curve');
```

And our output:



Significantly easier to read and understand: labeled axes, useful title, readable grid and ticks. All your results in this class should be turned in/presented in a similar manner.