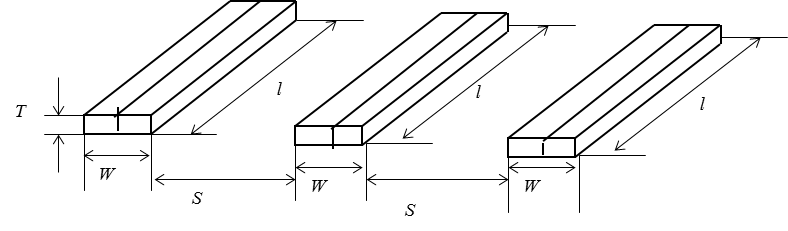
EE201C

Homework 1

Name: Peidong Chen UID: 204432674

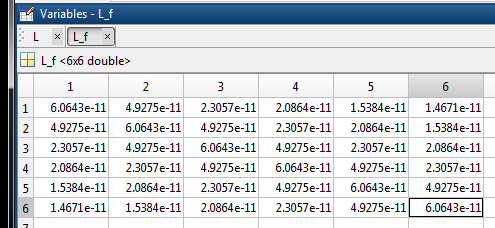


Discretize 3 wires into 6 filaments.

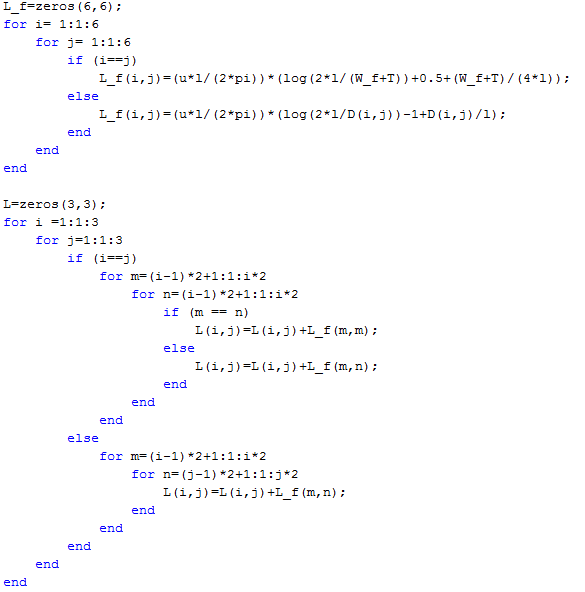
For each filament, calculate its self-inductance with:

For each pair of filament, calculate the mutual inductance with:

We can get the inductance matrix for 6 filaments:



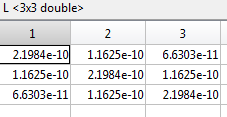
Calculate the matrix of inductance with Matlab code:



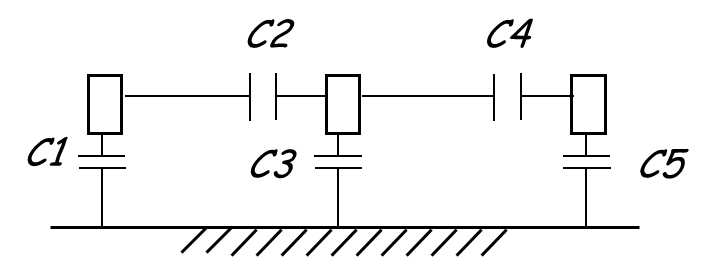
Calculate inductance matrix of three wires with:



We can get the inductance matrix for 3 wires:



Capacitance calculation:











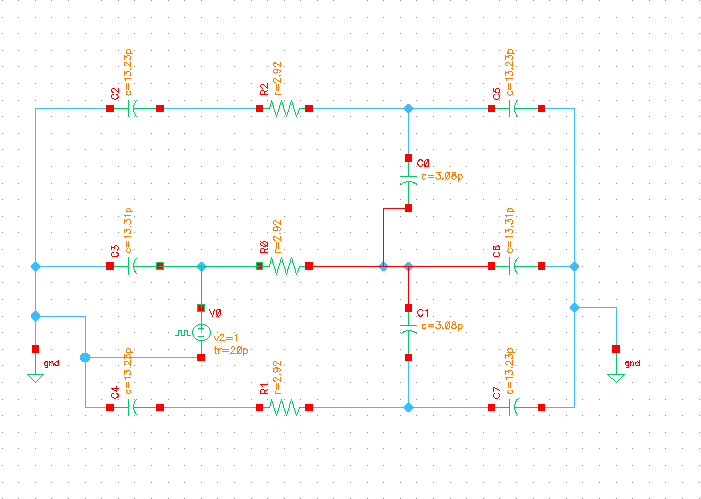
Resistance calculation:



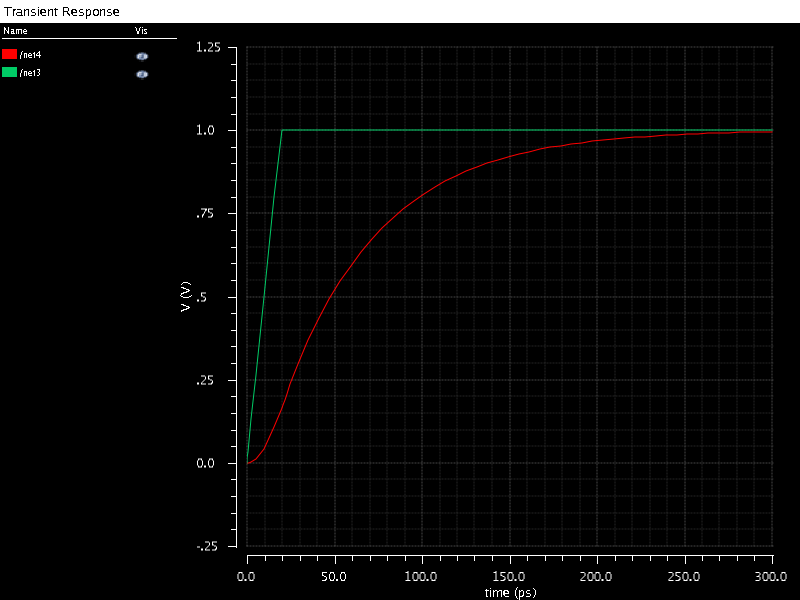
Simulation:

Layout with Cadence:

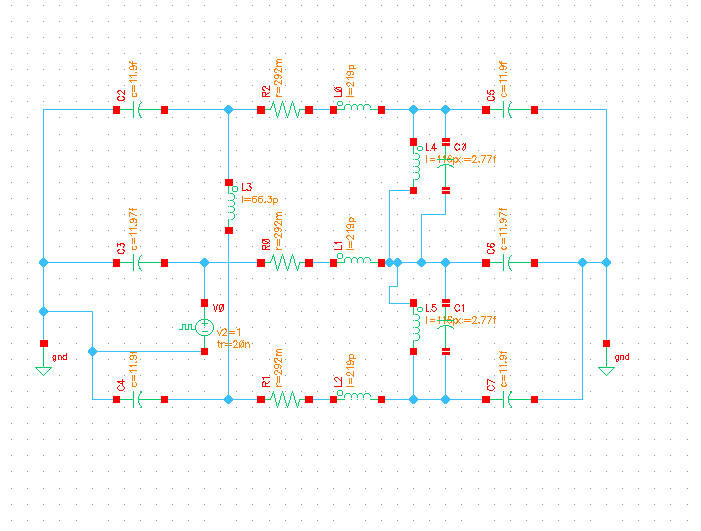
RC circuit model:



Rising time = 20ps



RCL circuit model:



Rising time = 20ps

