EE6347 – Devices for AI and Neuromorphic Computing

Tutorial 3

Task 1: Verilog – A model in ADS

1. You are given an incomplete model file to implement the Preisach saturation model. Complete the model by following the instructions written within the comments within the file.
2. Create the symbol corresponding to the MFM capacitor. You should be able to monitor the charge and capacitance, in addition to applying the input signal.

Task 2: Run a transient simulation

1. Run a transient simulation of 4 ms by sweeping the voltage from $0 \rightarrow 3 \rightarrow 0 \rightarrow -3 \rightarrow 0$.
2. Plot the charge Qfe and Capacitance Cfe as a function of applied voltage.
3. Determine the coercive voltage from this simulation.