CMOS Simulations for Neutron Sensing Array

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Abstract: With the end goal of using CMOS devices to develop a pixel neutron sensing array, CMOS structures will be modeled in Silvaco to define geometries and doping concentrations. Once the device characteristics are known, the devices can be modeled in LTSpice. Using these devices as building blocks, a single neutron sensing cell will be simulated in LTSpice. Design iterations between Silvaco and LTSpice will be made to further improve the neutron sensing cells as needed. Finally, the LTSpice model for a single pixel will be used to construct a 5x5 neutron sensing array.