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Simulations of neutron spin "gymnastics" for nEDM P/T measurement LARA BLOKLAND, SCARLETT WILSON, NADIA FOMIN, GEOFFREY GREENE, KAVISH IMAM, University of Tennessee — The nEDM@SNS experiment uses a cryogenic apparatus to search for the neutron electric dipole moment. Ultra-cold neutrons are produced using superfluid ^{4}He, and ^{3}He is used as a co-magnetometer and spin analyzer. The Larmor precession frequency of the neutrons will change if there is an electric dipole moment in the presence of an electric field. It's important to understand the magnetic fields in the apparatus, as well as the polarization loss and transmission efficiency of the neutrons. I'll present results of simulating the magnetic fields in Python using Bloch equations to characterize the spin precession through the apparatus.

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