Long Baseline Neutrino Experiment simulation studies on Offset of Detector and Proton Beam[1] AMIT BASHYAL, JAEHOON YU, SEONGTAE PARK, TIMOTHY WATSON, YVONNE YING WUNG NG, University of Texas at Arlington, UTA HEP TEAM — The Long Baseline Neutrino Experiment(LBNE), hosted by Fermilab is a world class physics program aiming to probe our understanding on neutrino physics and look for physics beyond Standard Model. While LBNE is still under development, the LBNE beam simulation group performs the simulation using the G4LBNE simulation software and packaged geometry. The simulation studies are done by shifting and offsetting several parameters (which represent the physical components of the real experiment). The results obtained were analyzed graphically and statistically. In this talk, I will explain the effect of beam offset and detector shifting on parameters like pion production in the decay pipe, intensity of neutrino flux, variation on the number of neutrinos in specific energy ranges. Simulation experiment results will help to simplify the complex nature of neutrinos itself to a small extent and the collective work from the beam simulation group can provide a raw guideline for the experiment itself in the long run.

[1]All the works are done as part of UTA collaboration with Fermilab.

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