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LBNF/DUNE Optimization

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The Deep Underground Neutrino Experiment (DUNE) will use an intense neutrino beam created in Illinois and sent through the Earth to a large liquid argon detector in South Dakota. The neutrino beam, part of the Long Baseline Neutrino Facility (LBNF), will consist of a 120 GeV proton beam which will impinge a long graphite target. Mesons produced in the target will be focused by three magnetic horns and will decay to neutrinos in a 200 m long decay pipe. The design of the target/horn system was optimized using a genetic algorithm. This optimization will be discussed, as well as other ongoing and future design optimizations within the DUNE collaboration.

Author: FIELDS, Laura Johanna (University of Notre Dame (US))

Presenter: FIELDS, Laura Johanna (University of Notre Dame (US))

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