

## The muon neutrino and anti-neutrino disappearance measurement with the Long-Baseline Neutrino Experiment (LBNE)

The Long-Baseline Neutrino Experiment (LBNE) has been proposed with intense muon neutrino and anti-neutrino beams produced at Fermilab, a near detector complex, and a large far detector built in the Homestake Mine in South Dakota. The primary measurements, studies of the neutrino mass hierarchy and searches for leptonic CP non-conservation, utilize electron neutrino appearance. Muon neutrino and anti-neutrino disappearance will also be studied in great detail. In addition to enhancing the sensitivity of the primary measurements, they will produce additional sensitive measurements of parameters of the neutrino mixing matrix. This poster will detail potential results as well as the requirements these results place on the near detector complex.

### Summary

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