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Fine-Grained Tracker as a Near Detector for LBNE

The reference design of the near detector for the LBNE experiment
is a Fine-Grained Tracker (FGT) capable of precisely measuring all four species of neutrinos: nu_mu, nu_e, anti-nu_mu and anti-nu_e. The FGT is composed of a Straw-Tube Tracker (STT) with transition-radation capability surrounded by a high resolution electromagnetic calorimeter (ECAL) and embedded in a dipole magnet. Muon-ID detectors instrument the iron-yoke of the magnet and the downstream and upstream stations outside the magnet. The STT is instrumented with Ar and other nuclear targets.
The goal of the FGT is to constrain systematic errors below the statistical error in all oscillation studies in the far detector. The FGT will also conduct a panoply of precision measurements and searches.

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Track Classification: Long Baseline Oscillations