

Long-Baseline Neutrino Oscillation Physics Sensitivities of the Hyper-Kamiokande Experiment

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The Hyper-Kamiokande experiment has a rich long-baseline neutrino program, as well as a variety of other physics goals. The long-baseline program will utilize a world-class neutrino beam produced at the high-intensity J-PARC accelerator constrained by a suite of near detectors. The Hyper-Kamiokande detector is a ~185 kton fiducial volume water Cherenkov detector, located 295 km from the beam neutrino source. Hyper-Kamiokande long-baseline measurements will be sensitive to the leptonic CP violating phase, δ_{CP} , as well as the atmospheric oscillation parameters, $\sin^2\theta_{23}$ and Δm^2_{32} . Combining the long-baseline and atmospheric neutrino measurements at the Hyper-Kamiokande detector will also allow for enhanced sensitivities, and in particular will help to resolve the neutrino mass ordering.

Attendance type

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