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Hyper-Kamiokande Neutrino Beam Oscillation Sensitivities

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Hyper-Kamiokande is a future experiment in Japan to measure neutrino oscillations with beam and atmospheric neutrinos, to study astrophysical neutrinos, and to search for proton decay. It uses the well-established water Cherenkov detector technique, with improved photosensors and increased fiducial volume, relative to the current generation's Super-Kamiokande detector. Combined with the upgraded J-PARC neutrino beam, Hyper-Kamiokande will be able to measure neutrino oscillations with an unprecedented precision. Construction has recently commenced, and data taking will begin in 2027. We will present the sensitivity of Hyper-K to CP violation, and other oscillation parameters of interest. These studies are based on the T2K model of systematic uncertainties projected according to the expected precision from the next generation of near and intermediate detectors in the J-PARC neutrino beam.

Collaboration name

Hyper-Kamiokande

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