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Neutrino Oscillations at T2K and Hyper-K

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The discovery of neutrino oscillations has established non-zero neutrino mass and implies new physics beyond the standard model to generate neutrino masses. T2K is a long baseline accelerator-based neutrino oscillation experiment in Japan, studying the oscillations of a muon (anti)neutrino beam. T2K is making world leading measurements of neutrino oscillation parameters, including the first constraints on the phase governing CP violation/conservation in neutrino oscillations. Hyper-K is a proposed successor to T2K with an 8-times larger detector and 2.5-times higher beam intensity. Hyper-K will collect large statistical samples of neutrino oscillations, searching for CP violation in the neutrino sector and making precision measurements of neutrino oscillation parameters. Hyper-K will also have a broad program of physics including nucleon decay searches, supernova neutrino detection, solar neutrino oscillation measurements and dark matter searches. In this talk, I will review the status of the T2K experiment and discuss the physics program of Hyper-K and the progress towards the realization the project.

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