

KMI Colloquium

Hyper-Kamiokande Project: Exploring Neutrino CP violation and Proton Decay



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Abstract:

We propose a new project: Hyper-Kamiokande to explore neutrino CP violation and proton decay with much better sensitivity. Hyper-Kamiokande is a successor of Super-Kamiokande. Hyper-Kamiokande has one Mega-ton mass with 100,000 20-inch photo-sensors. In the seminar, we introduce the basic design of Hyper-Kamiokande and its full physics potential. With Hyper-Kamiokande, we could discover neutrino CP violation in 3 sigma level in 76% region of CP violating phase delta. For the proton decay, we can search up to 10^{35} years with $e^+ \pi^0$ mode and 10^{34} years with $\bar{\nu} K^+$ mode. We plan to start the construction of Hyper-K in 2018 and data taking in 2025.

