

Prospects for BSM physics searches and NSI at Hyper-K and T2HKK

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The Super-Kamiokande and T2K substantially developed our understanding of oscillations by observing the sub-dominant electron-neutrino appearance channel. The next-generation Hyper-Kamiokande experiment will build on this with much higher statistics, enabling precision tests of the Standard PMNS picture. In the baseline design of 2 tanks at Kamioka, a detailed investigation of oscillations can be made in the vicinity of the first oscillation maximum, and at short baselines using the near detector. More interesting tests can be performed if the second tank is located in Korea, as this give access to a higher L/E regime that is three times higher than any previous long-baseline experiment. As well as benefits to the PMNS measurements, a new experimental regime makes it possible to resolve BSM models - such as non-standard interactions - which are statistically degenerate on a single baseline.

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