

Overview of the Hyper-K 2nd Detector in Korea

Monday, 2 July 2018 15:30 (30 minutes)

Hyper-Kamiokande (Hyper-K) succeeds the very successful Super-Kamiokande (Super-K) as a future water Cherenkov neutrino detector which will consist of two 260 kilo-ton water tanks with 40,000 photo-sensors per tank deep underground. The 1st detector will be built in Japan and the collaboration is considering to build the 2nd detector in Korea.

Thanks to longer baseline and deeper candidate sites in Korea, physics sensitivities are improved with the Japan-Korea configuration far than with both detectors in Japan.

The physics program is broad covering from particle physics using J-PARC neutrino beam to astrophysics and astronomy observing solar, Supernova burst/relic neutrinos as well as indirect dark matter search. Testing Grand Unification Theory will be also performed through proton decay search. It is expected that Hyper-K could answer important questions remained in these fields as well as unexpected new physics.

In this talk, I introduce Hyper-K and explain the benefits of locating the 2nd detector in Korea. Physics potentials and sensitivities are also presented.

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Session Classification: Parallel Session 1-5