

Contribution ID: 1324

Type: Talk

Hyper-Kamiokande: Neutrino astrophysics and Status.

Thursday 17 July 2025 15:20 (15 minutes)

Hyper-Kamiokande (Hyper-K) is a multi-purpose next-generation neutrino experiment aiming to start its operation in 2027.

The Hyper-K water Cherenkov detector consists of a two-layered cylindrical ultra-pure water tank with a height (diameter) of 64 (71) meters. The inner detector will be equipped with twenty thousand twenty-inch photomultipliers and 800 multi-PMT modules. These sensors detect the time and charge of the water Cherenkov radiation to reconstruct the properties of charged particles induced by neutrino interaction.

The Hyper-K detector provides a fiducial volume of 188 kilotons, 8.4 times that of preceding experiment Super-Kamiokande. Hyper-K's rich physics program includes accelerator neutrinos, atmospheric neutrinos, proton decay, and neutrino astrophysics, which are studied through the study of solar, supernova burst, and supernova relic neutrinos. With its comprehensive research programs, Hyper-K will be pivotal in advancing the frontier of neutrino physics.

This presentation will discuss the current project status and physics potential of Hyper-K in neutrino astrophysics.

Collaboration(s)

Hyper-Kamiokande

Author: YANO, Takatomi (ICRR, University of Tokyo) Presenter: YANO, Takatomi (ICRR, University of Tokyo) Session Classification: NU

Track Classification: Neutrino Astronomy & Physics