



ID de Contribution: 108

Type: Non spécifié

Physics and status of the Hyper-Kamiokande experiment

lundi 27 mars 2023 11:50 (25 minutes)

Hyper-Kamiokande is the next generation neutrino observatory to be built in Japan, and the successor of the Kamiokande and Super-Kamiokande detectors. It will be a 260 kton water Cherenkov detector, equipped with 20,000 PMTs, that has been considerably improved compared to the previous generation. It will allow the Hyper-Kamiokande experiment to have an extremely broad physics program: probing Grand Unified Theories through nucleon decay search, testing non-standard scenario observing solar neutrinos, constrain the supernovae models and star formation rate, or discover the leptonic CP violation for the very first time. In this presentation, we will explore the physics program of Hyper-Kamiokande in details, as well as present the status of the Hyper-Kamiokande construction that should be finalized in 2027.

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Classification de Session: Session

Classification de thématique: Neutrinos