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The Hyper-Kamiokande experiment

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Hyper-Kamiokande is the next generation water Cherenkov neutrino detector, which construction started in 2020 in Japan, and the experiment is expected to start data taking in 2027. Its fiducial volume, 8 times bigger than Super-Kamiokande, instrumented with new photosensors, combined with the upgraded to 1.3 MW J-PARC neutrino beam produced 295 km away and upgraded a near detector suite, will enable the determination of the CP violation in the leptonic sector, and precise measure atmospheric neutrino oscillations. Improved studies of astrophysical neutrinos (supernova burst neutrinos, supernova relic neutrinos, and solar neutrinos) and the search for proton decays in various final-state decays will also be possible. In this talk, I will present an overview of the physics program, the status of construction, and Polish involvement in the Hyper-Kamiokande project.

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