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# The Hyper-Kamiokande Light Injection Calibration System

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The upcoming Hyper-Kamiokande experiment is a next-generation water Cherenkov experiment which will be based in Japan. Hyper-K aims to make precision measurements of CP-violation and other neutrino oscillation parameters, atmospheric and solar neutrinos, supernova neutrinos, and proton decay. With a fiducial volume approximately eight times larger than its predecessor Super-Kamiokande, Hyper-K will become systematically limited, and therefore such precision measurements require accurate detector calibration.

The Hyper-K Light Injection (LI) system will be a key part of the calibration programme, injecting measured pulses of light into the detector volume in order to precisely measure photomultiplier tube (PMT) charge and timing response, as well as optical parameters of the water. In the inner detector (ID) volume, 33 injector positions will each feature a wide-angle diffuser and narrow-angle collimator. The outer detector (OD) volume will be instrumented with 122 diffusers and 12 collimators.

This talk will focus on the design, development and testing of the LI system components, from light sources to injectors, as well as presenting preliminary studies of its application to measuring water parameters.

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