



Poster session 4 – Friday 8 July

P4.027 A multi-channel optical module for the Hyper-K experiment

T Feusels¹ and G De Rosa²

¹University of British Columbia, Canada, ²University of Naples, Italy
on behalf of Hyper-K proto-collaboration

The next-generation water Cherenkov detector in Japan, Hyper-Kamiokande (Hyper-K), is proposed as a follow-up to the current Super-Kamiokande experiment. Its broad physics programme includes solar neutrinos, supernova neutrinos, the measurement of mass hierarchy and CP violation through atmospheric and accelerator neutrinos respectively and nucleon decay.

The Hyper-K experiment will consist of two large cylindrical water Cherenkov tanks with a total volume of 0.56 Mton. While one approach would be to instrument each tank with about 40,000 new 50 cm photosensors, the possibility to use pressure vessels (“optical modules”) instrumented with multiple small 7.7 cm photosensors will be discussed in this poster. The increased granularity and directional information, which would highly benefit the reconstruction, are some of its advantages. This detector concept is currently successfully being exploited by the KM3NeT experiment. The advantages and the status of the design of a multi-channel optical module prototype for Hyper-K and its near detector will be presented.