



## Poster session 1 - Monday 4 July

### P1.009 The underwater test of new photo-detectors for Hyper-Kamiokands

F Muto<sup>1</sup>, Y Itow<sup>1</sup>, Y Nishimura<sup>2</sup>, L Tianmeng<sup>2</sup>, D Fukuda<sup>3</sup>, Y Suda<sup>2</sup>, R Akutsu<sup>2</sup>, Y Okajima<sup>3</sup>, M Jiang<sup>4</sup> and S Hirota<sup>4</sup>

<sup>1</sup>Nagoya University, Japan, <sup>2</sup>University of Tokyo, Japan, <sup>3</sup>Okayama University, Japan, <sup>4</sup>Tokyo Institute of Technology, Japan, <sup>5</sup>Kyoto University, Japan

*on behalf of Hyper-Kamiokande collaboration*

The Hyper-Kamiokande (HK) experiment that aims to research into neutrino physics and proton decay has been planned. HK is a next generation detector that has the same detection method as Super-Kamiokande (SK). HK is planned to use about 500,000 tons ultrapure water and about 40,000 new-type photo-sensors per tank and HK will consist of tanks. The three 50cm photosensor candidates are the high quantum efficiency SK PMT, the Box&Line PMT, and the hybrid photodetector (HPD). Since HK is a project that will run long-term, stability and practicality of new photo-sensors need to be tested in underwater environment same as HK. Especially, since HPD must be applied HV of 8kV to detect photon and it is different to situation of SK, underwater test is essential. Therefore we installed new photo-sensors in a small water cherenkov detector (EGADS) and have been monitoring the fluctuation of dark rate and charge from 2013 to 2016. The result of underwater test of new photo sensors for HK will be presented.