

Application of MPPC for T2K near detector upgrade

Tuesday, 27 November 2018 16:25 (20 minutes)

We plan to equip about 60,000 MPPCs to build novel plastic scintillator detector for T2K near detector upgrade. Current goal of the T2K experiment is to measure CP violation phase in the neutrino sector, by measuring neutrino appearance in the long-baseline neutrino experiment. The upgrade of T2K near detector (ND280) aims to suppress systematic error to obtain better sensitivity for the experiment. A novel plastic scintillator detector, called SuperFGD, was then designed for this purpose. It consists of about 2,000,000 of 1 cm³ plastic scintillator cubes with readout of three orthogonal directions, using WLS fibers, surface-mount MPPC array on PCBs and electronics of those. This fully-active detector can provide about 2 tons of target mass, fine granularity and isotropic acceptance. We will present the application of MPPC for our detector and R&D status.

Primary author: MATSUBARA, Tsunayuki (KEK)

Presenter: MATSUBARA, Tsunayuki (KEK)

Session Classification: Tuesday afternoon