38th INTERNATIONAL CONFERENCE ON HIGH ENERGY PHYSICS
AUGUST 3 - 10, 2016
CHICAGO

Contribution ID: **977** Type: **Poster**

CHIPS-M cosmic ray benchmarking

Monday, 8 August 2016 18:30 (2 hours)

CHIPS (CHerenkov detectors In mine PitS) has been proposed to drastically cut the cost of neutrino beam water Cherenkov detectors, focused on measuring the CP-violating neutrino mixing phase (δCP). A single detector module would contain an enclosed volume of purified water submerged in an existing lake, located in a neutrino beam. The staged detector would be deployed in a flooded mine pit in Northern Minnesota, 7 mrad off-axis from the existing NuMI beam. A small (35 ton) proof-of-principle model (CHIPS-M) has already been tested under the water. One of the instruments submerged inside CHIPS-M in autumn 2015 was a prototype detection unit, constructed at Nikhef. The unit contained hardware borrowed from the KM3NeT experiment, including 16 3" PMTs and readout electronics. In addition to testing the mechanical design and data acquisition, it was used to characterise the cosmic ray muon background. We present a preliminary analysis of the data and a benchmarked estimate of the cosmic ray muon rate in the proposed 10kt detector

Primary authors: Mr PFUZNER, Maciej (UCL); Prof. THOMAS, jennifer (ucl)

Presenter: Mr PFUZNER, Maciej (UCL)

Session Classification: Poster Session

Track Classification: Detector: R&D and Performance