

XVI Neutrino Telescopes Workshop
Palazzo Franchetti – Venice, 2-6 March 2015

Poster Session – Submission of Abstract

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Title of the Poster

A novel spectrometer for neutrino experiments

Abstract

The WA104-NESSiE program aims to develop, in the context of the CERN Neutrino Platform, an innovative spectrometer to measure the charge and the momentum of muons in 0.5-5 GeV/c range. The project foresees a tracking system with a spatial resolution of 1-2 mm, to be eventually placed in a magnetized air volume in order to achieve a charge resolution and mis-identification better than 3% at 0.5 GeV/c.

Preliminary results obtained by detecting cosmic ray muons are discussed.

Summary

A system made of planes of triangular scintillator bars equipped with SiPM read in analog mode was developed for the reconstruction of muon tracks.

Tests have been performed with laser beams and radioactive sources in order to characterise the scintillator bars response and SiPM behaviour. A complex experimental set-up was used for determining the design and arrangement of a multi-plane prototype able to meet the requested performances.

Keywords

neutrino experiments, innovative spectrometer, tracking system.