

Poster Session – Submission of Abstract

Submitter: A. G. Tsirigotis
Physics Laboratory, School of Science & Technology, Hellenic Open University
tsirigotis@eap.gr

Authors: A. G. Tsirigotis, G. Bourlis, A. Leisos, D. Lenis, S. E. Tzamarias

Title of the Poster: HOU Reconstruction & Simulation (HOURS): A simulation and reconstruction package for neutrino telescopes

Abstract:

The HOU Reconstruction & Simulation (HOURS) software package has been developed in order to study in detail the response of underwater neutrino telescopes. HOURS comprises a realistic simulation package of the detector response, including an accurate description of all the relevant physical processes, the production of signal and background as well as several analysis strategies for triggering and pattern recognition, event reconstruction, tracking and energy estimation. Furthermore, this package provides the tools for simulating calibration techniques as well as other studies to estimate the detector sensitivity to several astrophysical neutrino sources and atmospheric neutrino oscillation parameters.

Summary:

In this work we report on the structure and performance of the HOURS package. We also report on results, using HOURS, for the evaluation of the performance of a Mediterranean neutrino telescope to discover/observe astrophysical neutrino sources, and on results for the detection efficiency of low energy atmospheric neutrinos for neutrino oscillation studies.

Keywords:

Neutrino telescope, Event simulation, Event Reconstruction