

The Potential of Water-Cherenkov Air Shower Arrays for detecting transient sources of high-energy astrophysical neutrinos

Wednesday 4 September 2024 08:20 (1 minute)

In this work, it is demonstrated the potential of modern and future air shower arrays with water-Cherenkov stations for detecting upward-going neutrino events from tens of GeV to hundreds of TeV. The detection methodology employs a novel machine learning-based analysis of the signal time traces of individual stations with multiple photosensors. This enables the reconstruction of the neutrino's direction and the suppression of the overwhelming background produced by cosmic rays. Our results showcase the complementarity of this approach to existing and upcoming neutrino-detection experiments, such as IceCube and Hyper-Kamiokande.

Primary author: SERRANO GONZÁLEZ, Borja (LIP/IST)

Presenter: SERRANO GONZÁLEZ, Borja (LIP/IST)

Session Classification: Poster hang