



Contribution ID: 38

Type: **not specified**

Search for anomalies in the neutrino sector with muon spectrometers and large LArTPC imaging detectors at CERN

The long standing series of experimental results hinting at the hypothesis of sterile neutrinos [1] deserve in our opinion a major CERN investment to definitely clarify the underlying physics. The interest of the scientific community in this topic is almighty as proven by the existence of several projects and studies that are under development worldwide. However, only CERN may be in position to run an ultimate experiment able to investigate every possible oscillation scenario with high sensitivity.

We report here on the experimental proposal [8] currently under scrutiny by CERN committees. The experiment follows the setting up of a new neutrino beam at SPS in a short time schedule. We deem mandatory that both beam and experiment be ready by December 2015, in order to be competitive with the expected flow of neutrino physics results in the international landscape.

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