

XVI Neutrino Telescopes Workshop
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Poster Session - Submission of Abstract

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Title of the Poster: SOX: Neutrino Oscillometry in Borexino

Abstract Text:

Several observed anomalies in the neutrino sector could be explained by a 4th (sterile) neutrino with a squared mass difference in the order of 1eV^2 to the other three standard neutrinos. This hypothesis can be tested with an artificial kCi antineutrino (Ce-144/Pr-144) source deployed near or inside a large low background detector like Borexino. The SOX project (short baseline neutrino oscillation with Borexino) aims for the detection of sterile neutrinos and offers the almost unique possibility to observe the characteristic antineutrino oscillation pattern within the detector. The poster will summarize this concept and will show the sensitivities for the possible phases of the experiment. Particular focus will be given to the antineutrino spectrum calculation and Monte Carlo simulation.

Summary:

The SOX concept to search for sterile neutrinos will be presented.

Keywords: sterile neutrinos, neutrino anomalies, liquid scintillator, Borexino