

The SuperChooz project: a LiquidO-based neutrino oscillation experiment

venerdì 21 giugno 2024 17:30 (2 ore)

The LiquidO technology proposes a new paradigm of detection that uses an opaque medium to confine light and wavelength-shifting fibers to collect it near its point of emission. After a summary of the demonstration of light confinement using a 10-liter prototype, we will explore a future project that will exploit this technology.

The SuperChooz project is a neutrino oscillation experiment consisting of a 10 kton detector planned to be based near the Chooz nuclear reactor in France. In the context of this project, we will explore the background rejection capabilities of a LiquidO-based detector.

The main point of interest of the LiquidO technology is the possibility to access the topology of an event. Therefore, we will mainly focus on the use of spatial coincidences in neutrino reactions to reject background events. Through the use of Monte-Carlo simulations, we will be testing different levels of spatial resolutions. We will observe how those resolutions affect the background rejection capabilities of the SuperChooz detector.

We will focus more closely on the reaction of neutrinos on ^{115}In proposed by Raghavan in 1976 to probe the solar neutrino spectrum.

Poster prize

Yes

Given name

Surname

First affiliation

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Gender

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Collaboration (if any)

LiquidO

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Classifica Sessioni: Poster session and reception 2

Classificazione della track: New technologies for neutrino physics