東北大学　宇宙創成物理学国際共同大学院プログラム

RCNS-GPPU Joint Seminar

“SuperChooz; Prospect of Physics Potential”

by Anatael Cabrera (IJCLab, France)

Time and Date: 15:00-17:00, Mar 31st, 2023
Place: Research Center for Neutrino Science Annex (I03),
(Prefab housing between Kita-Aobayama Library (I02) and RCNS(I04))
2nd floor seminar room [in-person only]

Abstract: The next generation of neutrino flagship experiments, JUNO, HyperKamiokande, DUNE experiments, based, respectively, in China, Japan and US are going to measure the unknowns in the standard neutrinos oscillation, such as leptonic CP violation, by early 2030. A new Europe-based neutrino experiment; SuperChooz, exploiting at the Chooz nuclear power station (France) — Europe’s most renowned site for reactor neutrino research, is designed to probe a few of the most insightful symmetries of the Standard Model, using both reactor and solar neutrinos. The Chooz nuclear power station has potential to offer two powerful nuclear reactors and an underground experimental site of up to 50,000m3 volume at ~1km away from the reactors for fundamental neutrino science. The main experimental challenge is the site’s shallow overburden (~100m), that demands the use of our novel LiquidO technology. Since 2022, CNRS and EDF have signed the cooperation agreement, starting the so-called SuperChooz Pathfinder to address the feasibility of the project. In this seminar, I shall review the s tatus of the project and the most important elements of the physics program of SuperChooz.

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