

Exploring the New Physics at the Neutrino facilities of European Spallation Source

mercredi 1 juin 2022 16:30 (20 minutes)

European Spallation source (ESS) is a highly ambitious and promising multi-disciplinary research facility based on the World's most powerful pulsed neutrons. It will also generate the high intensity neutrino fluxes from very low to high energies suitable for the studies of both the neutrino oscillation as well as Coherent Elastic Neutrino-Nucleus Scattering (CE ν NS) at different baselines. Based on arXiv: 2111.08673 and work in progress, in the first part of the talk, I will discuss the impact of the non-unitarity of the lepton mixing matrix on the measurements of the standard CP-sensitivities at the various setups based on the ESS neutrino super-beam (ESS ν SB) experiment. We also examine its potential in constraining the associated new physics parameters. In the second part, I will talk about the exciting possibilities of exploring the non-standard interactions (NSI) of neutrinos in the context of Coherent Elastic Neutrino-Nucleus Scattering using various detector technologies.

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