

## New Physics from oscillations at DUNE near detector

*Wednesday 22 September 2021 10:15 (25 minutes)*

We will study the capabilities of the DUNE near detector to probe deviations from unitarity of the leptonic mixing matrix, the 3+1 sterile formalism and Non-Standard Interactions affecting neutrino production and detection, clarifying the relation and possible mappings among the three formalisms. Particular attention will be paid to the analysis of the  $\nu_\tau$  appearance channel and the impact of spectral uncertainties (which has been widely overlooked in the literature). We will show that this plays a very important role on the results. Nevertheless, even with our conservative and more realistic implementation of systematic uncertainties, we find that an improvement over current bounds in the new physics frameworks considered is generally expected.

**Author:** LOPEZ PAVON, Jacobo (IFIC, Universitat de València-CSIC)

**Presenter:** LOPEZ PAVON, Jacobo (IFIC, Universitat de València-CSIC)

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