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Neutrino and Anti-Neutrino CP-Violation Framework at π-Decay at Rest

Authorship annotation

Session and Location

Wednesday Session, Poster Wall #93 (Auditorium Gallery Left)

Abstract content

The neutrino oscillation phenomenology foresees the presence of CP-violation accessible via high precision neutrino oscillation measurements with both neutrino and antineutrinos. Already today, non-null CP-violation is hinted by running T2K and NOvA experiments. In this poster, we present a novel experimental framework for high precision CP-violation based on a powerful π-decay-at-rest neutrino source. For the first time, both the π's mono-energetic ν_μ and μ's continuous $\bar{\nu}_\mu$ are exploited simultaneously in the electron appearance channel with low systematics. This approach relies on a novel detector technology expected to yield unprecedented ν_e and $\bar{\nu}_e$ charged current interactions identification. The measurement phenomenological framework is discussed in detail, along with the expected sensitivity in different experimental scenarios.

Poster included in proceedings:

yes

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