Contribution ID: **69** Type: **not specified**

Exploring the Impact of Quantum Decoherence on Precision Measurements in DUNE and T2HK

Monday, 1 July 2024 18:10 (5 minutes)

Abstract: This study delves into how quantum decoherence in neutrinos could influence the precision of standard oscillation parameter measurements in the DUNE and T2HK experiments. Our analysis suggests that the measurements of δ_{CP}, $\sin^2\theta_{13}$, and $\sin^2\theta_{23}$ are notably affected in DUNE, more so than in T2HK. Conversely, DUNE exhibits a higher sensitivity to detecting decoherence effects compared to T2HK. By combining data from both experiments, we demonstrate the potential for achieving robust measurements of standard parameters, which may not be feasible with DUNE data alone.

Title of the Poster/Talk

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Primary authors: Dr GAGO, Alberto (Pontificia Universidad Católica del Perú); Mr CALATAYUD-CADENILLAS, Anthony; Dr TERNER, Christoph (Istituto Nazionale di Fisica Nucleare); Dr BAREBOIM, Gabriela (Universitat de València)

Presenter: Mr CALATAYUD-CADENILLAS, Anthony

Session Classification: Young Scientist Forum