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Unveiling the Majorana nature of neutrinos via precision measurement of the CP violation

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The interaction of an (external) decoherence environment with a neutrino system can turn on the Majorana phases in the neutrino oscillation channels $\nu \rightarrow \nu$ and $\bar{\nu} \rightarrow \bar{\nu}$. As a consequence, and relying upon the value of the Majorana phase and the magnitude of the leading decoherence parameter, a distorted measurement of the Dirac CP violation phase δ_{CP} at DUNE is expected. This distortion would be evident by the disagreement between the CP violation measurements that will take place in DUNE and T2HK. An exploration of the measurement of the Majorana phase at DUNE is also displayed.

Author: GAGO, Alberto (Pontificia Universidad Católica del Perú)

Presenter: GAGO, Alberto (Pontificia Universidad Católica del Perú)

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