



Contribution ID: 323

Type: **Poster (in person)**

On the PMNS matrix: symmetry and non-unitarity

Monday 8 July 2024 18:00 (20 minutes)

Neutrino oscillation is a phenomenon where the neutrino oscillates between its flavor states while propagating. This comes as a result of neutrino flavor states being eigenstates of the weak interaction Hamiltonian but not of the propagation Hamiltonian. The latter possesses different eigenstates called the mass states. The change of basis between these states is described by a unitary matrix called the PMNS matrix. The PMNS matrix can be parametrized by three mixing angles and a CP violation phase. In this project we discuss two different aspects of this matrix: symmetry and non-unitarity. The symmetry aspect refers to the existence of a certain pattern within the oscillation parameters. The non-unitarity part in its turn aims at assessing the unitarity of the PMNS matrix providing an indirect search for sterile neutrinos. We endeavor to implement and assess these aspects using the P-theta framework developed by the T2K collaboration. This latter integrates the systematic parameters of T2K and HK with oscillation parameters in order to give predictions to be compared with data.

Apply for poster award

Yes

Primary authors: Mr CHAHLAOUI, Ahmed (ICRR, The University of Tokyo); Mr MAAITAT, Aymane (ICRR, The University of Tokyo)

Presenters: Mr CHAHLAOUI, Ahmed (ICRR, The University of Tokyo); Mr MAAITAT, Aymane (ICRR, The University of Tokyo)

Session Classification: Posters

Track Classification: Physics and Detector: BSM, Global Interpretations