

The 3+1 Neutrino Model at NO ν A and DUNE

Authorship annotation

Session and Location

Monday Session, Poster Wall #150 (Hölderlin-Room)

Abstract content

We investigate the impact of a light sterile neutrino ($\sim 1\text{eV}$) on the data expected from currently running LBL experiment NO ν A and future experiment DUNE. If an eV scale sterile neutrino exists, and has non-zero mixing with the other neutrinos then nature of the predictions for the mass hierarchy, CP-violation and octant by these two experiments will be modified. Parameter degeneracy resolution is key in oscillation physics as there are a multitude of them that make distinguishing results difficult. In the 3 ν case, for certain favoured combinations of δ_{13} and the sign of Δm_{31}^2 , NO ν A can resolve the MH and octant degeneracies. On the other hand, DUNE should have no problem with these degeneracies once it is complete and running. It is interesting then, in light of recent data showing favourable true values, to analyse the effect of adding a light sterile neutrino and to see whether sensitivity to any of these degeneracies is lost.

Poster included in proceedings:

no

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