Contribution ID: **60**   Type: **not specified**

Constraints on neutrino decay scenarios with electron anti-neutrino disappearance experiments.

Neutrino decay provides a very interesting case for the "beyond PMNS" neutrino physics. It has been shown that this phenomenon can also explain some of the anomalies seen in neutrino experiments. We study the constraints that $\bar{\nu}_e$ disappearance experiments like JUNO and KamLAND can put on neutrino decay scenarios. In particular, we consider a model where a heavier neutrino can decay giving active daughter neutrinos which can then be detected in these experiments. We find that the experiments JUNO and KamLAND can together constrain τ_3/m_3 10^{-10} s/eV for the normal hierarchy and τ_2/m_2 10^{-9} s/eV for the inverted hierarchy. We discuss an interesting physics case because of which the bounds are better for the inverted hierarchy. Unlike ν_e appearance experiments, the $\bar{\nu}_e$ disappearance events do not change much depending on whether the decay products are visible or not. This is due to the smallness of $|Ue3|$.

Primary author: PRAKASH, Suprabh (IFGW, Unicamp)

Co-authors: Mr PORTO SILVA, Yago Phillipe (Instituto de Fisica Gleb Watagin);   Dr L. G. PERES, Orlando (Instituto de Fisica Gleb Wataghin);   Dr NUNOKAWA, Hiroshi (PUC, Rio de Janeiro);   Dr MINAKATA, Hisakazu (IFT, UAM)

Presenter: PRAKASH, Suprabh (IFGW, Unicamp)

Session Classification: Posters & welcome reception