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# 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 $\tau_3/m_3$ $10^{-10}$ s/eV for the normal hierarchy and $\tau_2/m_2$ $10^{-9}$ s/eV for the inverted hierarchy. We discuss an interesting physics case because of which the bounds are better for the inverted hierarchy. Unlike $\nu_e$ 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 $|Ue3|$.

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