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# Lepton number violation in a unified framework

We study the time evolution of lepton family number for neutrino which forms SU(2) doublet with charged lepton. The lepton family number carried by the neutrino is defined with a left-handed current of the neutrino family. We introduce the mass term at t = 0 and study the time evolution of the lepton family number for the later time. Since the operator in flavor eigenstate continuously connected to that of the mass eigenstate, the creation and annihilation operators for flavor eigenstates are related to those of mass eigenstates. By choosing a specific flavor eigenstate of neutrino as an initial state, one can compute the time evolution of all lepton family numbers. They are sensitive to Majorana and Dirac phases and also are sensitive to the absolute mass and mass hierarchy of neutrinos.

## Mini-abstract

Time evolution of lepton family number under the presence of massive Majorana mass terms.

## Experiment/Collaboration

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