

Space time evolution of the lepton number densities including the momentum distribution

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“We investigate the Space time evolution of the lepton number densities. The formulation is constructed as the time evolution of a lepton family number density operator. The expectation value of the density operator is evaluated for the initial state with a Gaussian distribution for the momentum amplitude. This enables us to study wave-packet-like decoherence effects. We show in the non-relativistic regime, the type of neutrino mass (Dirac or Majorana) are distinguishable even under the presence of wave-packet-like decoherence effects.”

Presenter: MOROZUMI, Takuya (Hiroshima University)

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