

Dubravko Klabuřar: Neutrino oscillations in Finite Time Path out-of-equilibrium Field Theory

We demonstrate that the Finite-Time-Path Field Theory is an adequate tool for calculating neutrino oscillations. We apply this theory using a mass-mixing Lagrangian which involves the appropriate Dirac spin and chirality structure and a Pontecorvo-Maki-Nakagawa-Sakata (PMNS)-like mixing matrix. The model is exactly solvable. The Dyson-Schwinger equations transform propagators of the input free (massless) flavor neutrinos into a linear combination of oscillating (massive) neutrinos. The results are consistent with the predictions of the PMNS matrix while allowing for extrapolation to early times.