



Contribution ID: 504

Type: Poster

Fast Neutrino Flavor Conversion at Late Time

The huge number density of neutrinos inside supernovae allows self-interaction resulting in exciting nonlinear phenomena like rapid and complete neutrino flavor conversion of broadly two types : “slow” collective and “fast” conversion. The linear stability analysis of such flavor conversions has been studied which is useful to ascertain if or when such conversions take place. But it cannot directly answer the question about the impact of such flavor conversions on observable neutrino fluxes or supernova explosion mechanism. This requires understanding the nature of the system in the full nonlinear regime and is quite nontrivial. Moving towards this direction we study the late time fast flavor evolution of a system of dense neutrinos in 1+1D. We find at late times the polarization vectors associated with the flavor dynamics of such systems become steady in time with flavor pendulum motion in space leading to complete (partial) decoherence for zero (nonzero) lepton asymmetry.

Mini-abstract

Late time fast conversion: Steady state in time, Flavor pendulum motion in space & decoherence .

Experiment/Collaboration

Primary author: Mr BHATTACHARYYA, Soumya (TIFR)

Presenter: Mr BHATTACHARYYA, Soumya (TIFR)

Session Classification: Poster session 4