

Approximated three-flavor neutrino oscillation probabilities in matter for a generic decoherence matrix

The quantum decoherence phenomena has been largely studied as a sub-leading effect within the neutrino oscillation framework. From the analytical point of view, two-flavor neutrino oscillation probabilities in matter have been derived for a generic decoherence matrix. The aim of this work is, assuming a generic decoherence matrix (i.e. with off-diagonal elements non - zero) to develop analytical approximated neutrino oscillation probabilities formulae for a three-flavor scenario in constant density matter, taking $\alpha = \Delta m_{12}^2/\Delta m_{13}^2$ and θ_{13} as small parameters . Finally, using these formulae we take a brief look of its phenomenological consequences.

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Authors: Mr CARRASCO MARTÍNEZ, Juan Carlos (Pontificia Universidad Católica del Perú); Prof. GAGO MEDINA, Alberto Martín (Pontificia Universidad Católica del Perú)

Presenter: Mr CARRASCO MARTÍNEZ, Juan Carlos (Pontificia Universidad Católica del Perú)

Session Classification: Poster Session