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Oscillation probability for non-standard interactions of neutrino propagation in matter

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In this work, an analytical expression for appearance probability has been derived for neutrino (anti-neutrino) oscillations in matter, including non-standard interactions (NSI-*propagation*). We consider two NSI parameters $\epsilon_{e\mu}$ and $\epsilon_{e\tau}$ to obtain the expression for $\nu_\mu \to \nu_e$ ($\bar{\nu}_\mu \to \bar{\nu}_e$) transition, relevant to the ongoing and upcoming accelerator neutrino experiments. We also compare our result to that of exact expression of the oscillation probability.

Working group

WG1

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