

Vector leptoquark U_3 and its implications on current long baseline experiments.

In this work, we study the effect of vector leptoquark U_3 which can induce nonstandard interactions (NSIs) between the propagating neutrinos and the nucleons within the earth. These interactions lead to relatively large values of NSI parameter $\varepsilon_{e\mu}$ and $\varepsilon_{e\tau}$. In this context, we show that the current discrepancy between the observed δ_{CP} results of T2K and NOvA can be explained in the presence of a vector leptoquark U_3 . We further study how these interactions can constrain the neutrino oscillation parameters in the context of currently running long baseline experiments.

Working group

WG5

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