

Constraining generalised neutrino interactions with COHERENT data

Wednesday, August 29, 2018 3:30 PM (0:15)

Abstract content

Coherent neutrino-nucleus scattering can provide stringent constraints on generalised effective neutrino-quark interactions. While neutrino-quark non-standard interactions (NSI) represent a subset of these generalised interactions, in full generality they may include all possible four-fermion Lorentz structures. Depending on their strength, these new interactions can sizably modify the coherent neutrino-nucleus elastic scattering process and thus they can be constrained by the recent COHERENT data. We derive constraints on these generalised interactions by considering scalar, vector and tensor couplings.

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Session Classification : Particle Physics

Track Classification : Particle Physics