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Neutrino-hadron cross-section at high densities and ultrahigh energies

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The high parton density present at high energies and large nuclei is expected to modify the lepton-hadron cross section and the associated observables. In this paper we analyse the impact of the high density effects in the average inelasticity and the neutrino-nucleus cross section at ultra high energies. We compare the predictions associated to the linear DGLAP dynamics with those from the Color Glass Condensate formalism, which includes non-linear effects. Our results demonstrated that the non-linear effects reduce the average inelasticity and that the predictions of the distinct approaches for the neutrino-nucleus cross section at ultra-high energies are similar.

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