

The 19th International Workshop on Neutrinos from Accelerators (NUFACT2017)



Contribution ID: 60

Type: **talk**

Meson-exchange currents and quasielastic predictions for neutrino-nucleus scattering

Thursday, 28 September 2017 14:30 (30 minutes)

We summarize our recent progress in the description of charged-current neutrino-nucleus interaction in the GeV region within the SuSAv2-MEC approach, a fully relativistic model based on the analysis of electron-nucleus scattering data and recently improved with the inclusion of Relativistic Mean Field theory effects. In particular, we discuss the weak excitation of two-particle-two-hole (2p2h) states induced by meson exchange currents and illustrate the role of relativistic effects, quantify the size of the direct-exchange interferences, and the relative importance of the axial versus vector current.

The model is validated versus all available electron-carbon scattering data and its predictions are compared with neutrino scattering data from MiniBooNE, MINERvA, T2K and NOMAD.

The results of a recent study on the density dependence of the 2p2h response are also presented and discussed.

References:

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Session Classification: WG2: Neutrino scattering physics

Track Classification: Working Group 2: Neutrino Scattering Physics