

Meson productions in neutrino-nucleon scattering

Tuesday, 26 July 2016 16:50 (35 minutes)

We discuss our dynamical coupled-channels (DCC) model for neutrino-nucleon interaction in the resonance region where single- and double-pion productions are dominant. Our DCC model is based on meson-exchange non-resonant mechanisms, and excitations of nucleon resonances. By solving a set of coupled-channels scattering equation, we obtain amplitudes for meson productions such as πN , $\pi\pi N$, ηN , K Sigma and K Lambda. The DCC model has been well tested by a large amount of data for meson productions induced by pion, photon and electron. We extend the DCC model to describe the neutrino-induced processes. Developing the axial-current is a crucial part of the extension. We present and discuss results of our calculations for the neutrino-induced meson production cross sections. We also compare our results with available experimental data.

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Session Classification: Baryons