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Hartree-Fock & Continuum RPA Calculations of lepton-nucleus interactions, and recent Ar(e,e') measurements at Jlab

Wednesday, 5 December 2018 15:00 (30 minutes)

The quest of precision and new physics search at intensity frontier experiments relies greatly on the precision with which the neutrino interaction with target nucleus is understood. In this talk, I will present nuclear many body calculations within Hartree-Fock and continuum RPA approach for electro- and neutrino-nucleus scattering. The approach covers processes from threshold to giant-resonances to quasi elastic region. I will present their comparison with electron- and neutrino-nucleus cross section data. A qualitative and quantitative comparison of different RPA-based approaches will be presented. Furthermore, the differences between electron-neutrino and muon-neutrino cross sections will be briefly discussed. Finally, I will present the recent cross section results from Ar(e,e') experiment at Jefferson lab.

Presenter: PANDEY, Vishvas

Session Classification: Solar Neutrinos/Neutrino Scattering