Contribution ID: **238**   Type: **Talk in Parallel Session at DIS2013**

Generalized parton distributions from neutrino experiments

Wednesday, 24 April 2013 08:50 (20 minutes)

The analysis of deeply virtual meson production is extended to neutrino-production of the pseudo-Goldstone mesons (pions, kaons, eta-mesons) on nucleons, with the flavor content of the recoil baryon either remaining intact, or changing to a hyperon from the SU(3) octet. We rely on the SU(3) relations and express all the cross-sections in terms of the proton generalized parton distributions (GPDs). The corresponding amplitudes are calculated at the leading twist level and in the leading order in \alpha_{s}, using a phenomenological parametrization of GPDs. In the analysis, we take into account the electromagnetic Bethe-Heitler type contribution to neutrino-induced deeply virtual meson production (\nuDVMP). Such O(\alpha_{em})-corrections decrease with Q^{2} in the Bjorken regime less steeply than the standard \nuDVMP handbag contribution. Therefore, they are relatively enhanced at high Q^{2}. The Bethe-Heitler terms give rise to an angular correlation between the lepton and hadron scattering planes with harmonics sensitive to the real and imaginary parts of the DVMP amplitude. These corrections constitute a few percent effect in the kinematics of the forthcoming Minerva experiment at Fermilab and should be taken into account in precision tests of GPD parametrizations. For virtualities Q^{2}~100 GeV^{2} these corrections become on a par with DVMP handbag contributions.

This talk is based on our recent papers Phys.Rev. D86 (2012) 113018 [arXiv: 1210.4825] and Phys. Rev. D 87, 033008 (2013) [arXiv: 1301.7014]

Primary author: SIDDIKOV, Marat (Universidad Santa Maria)

Co-authors: KOPELIOVICH, Boris (UTFSM);   Prof.   IVAN, Schmidt (Universidad Técnica Federico Santa María)

Presenter: SIDDIKOV, Marat (Universidad Santa Maria)

Session Classification: WG6: Spin

Track Classification: Spin Physics