ESTIMATES OF EXCLUSIVE CHANNEL CROSS-SECTIONS FROM THE CLAS MESON ELECTROPRODUCTION DATA

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The special approach has been developed for evaluation of π^+n, π^0p, ηp, $\pi^+\pi^-$p, $K^+\Lambda$, $K^+\Sigma^0$ exclusive channels contributions to inclusive F_1 and F_2 structure functions from the data collected with the CLAS detector at Jefferson Laboratory and stored in the CLAS Physics Database [1]. The contributions of all these exclusive channels to the inclusive structure functions F_1 and F_2 were obtained from the CLAS experimental data and interpolated over the kinematic region of the invariant masses of the final hadron systems (W) from the thresholds to 2 GeV and the photon virtualities from 0.2 to 5 GeV^2. Information on exclusive channel contributions allows us to compute fully integrated cross-sections of all aforementioned exclusive channels in the resonance excitation region and at photon virtualities which correspond to the transition from combined contribution of both meson-baryon and quark degrees of freedom to the resonance structure toward the dominance of quark degrees of freedom.

The results obtained are of particular interest for interpretation of experimental data on inclusive and semi-inclusive electroproduction in N^* excitation region. They are also important for preparation of the future experiments on the hadron structure studies with the CLAS12 detector after the completion of the 12 GeV Upgrade project at Jefferson Laboratory [2, 3].

1. CLAS Physics Database; http://clas.sinp.msu.ru
2. I.G.Aznauryan, V.D.Burkert // Progr. Part. Nucl. Phys. 2012. V.67. P.1.
3. P.L.Cole, V.D.Burkert, R.W.Gothe, V.I.Mokeev // Nucl. Phys. Proc. Suppl. 2012. V.233. P.247.