

XXVIII International Workshop on Deep-Inelastic Scattering and Related Subjects



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Diffraction DVCS and two meson production at an electron-ion collider

In high energy electron-ion colliders, a new way to probe nucleon structure becomes available through diffractive reactions, where the incident particle produces a very energetic almost forward particle. QCD describes these reactions as due to the exchange of a Pomeron which may be perturbatively described as a dressed two-gluon state, provided a hard scale allows the factorization of the amplitude. In this talk, we consider two diffractive exclusive processes that give access to hadronic structure in terms of the generalized parton distributions (GPDs): 1) electroproduction of a forward ρ meson and a timelike deeply virtual photon, 2) electro- and photoproduction of two mesons. In both reactions we consider kinematics where the two produced particles are separated by a large rapidity gap. The GPDs enter in these reactions in a specific way: only quarks enter, and only the so-called ERBL region contributes. We show estimates for these processes at the future electron-ion collider for proton and deuteron beams, and discuss the dependence on non-perturbative inputs (GPDs, distribution amplitudes).

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