

Hard exclusive vector meson leptonproduction at HERMES.

The HERMES experiment at DESY, Hamburg collected a set of data on hard exclusive vector meson (ρ^0 , ϕ , ω^0) leptonproduction process using the 27.6 GeV HERA longitudinally polarized lepton beam and longitudinally and transversely polarized or unpolarized gas targets. Measurements of exclusive vector mesons production allow one to study the structure of the nucleon, since the process can be described in terms of Generalized Parton Distributions (GPDs). The azimuthal asymmetries measured in exclusive meson production in the HERMES experiment provide access to the information related to GPDs. Spin density matrix elements extracted at HERMES describe the distribution of final spin states of vector mesons. S-channel helicity conservation for ϕ meson production is observed, whereas there are indications of violation from this hypothesis in case of ρ^0 meson production. An overview of the HERMES results on exclusive vector mesons production processes is presented.

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