

DIFFRACTION IN DIS AT HERA

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S u m m a r y

In this paper, results are presented from the experiments H1 and ZEUS at HERA on diffractive reactions in photoproduction and in deep inelastic scattering. Data are shown for exclusive vector-meson production, inclusive diffractive scattering, and on deeply virtual Compton scattering (DVCS). The data are compared to Regge phenomenology and the Pomeron trajectories are extracted for the different reactions, except DVCS. Also fits and predictions of perturbative QCD models are compared to the experimental results. From the description of the data in these two approaches it is demonstrated that there is a transition from soft diffraction to hard diffraction when either the mass of the diffractively produced system gets high or the negative four-momentum transfer squared, Q^2 , from the electron/positron to the diffractively produced system or the absolute value of the four-momentum transfer squared, $|t|$, from the proton to the diffractively produced system become large.