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Direct Photons at HERA

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The production of prompt photons is measured in the photoproduction regime of electron-proton scattering at HERA. Cross sections are measured for photons with transverse momentum and pseudorapidity in the range $6 < E_t < 15$ GeV and $-1.0 < \eta < 2.4$, respectively. The results are compared with QCD predictions based on the collinear and on the k_T factorisation approaches. The first measurement of diffractive scattering of quasi-real photons with large momentum transfer $\gamma p \rightarrow \gamma Y$, where Y is the proton dissociative system, is made using the H1 detector at HERA. The measurement is performed for initial photon virtualities $Q^2 < 0.01$ GeV². The W dependence is well described by a model based on perturbative QCD using a leading logarithmic approximation of the BFKL evolution. New measurements of elastic deeply virtual Compton scattering $\gamma^* p \rightarrow \gamma p$ using $e^+ p$ and $e^- p$ collision data recorded with the H1 and ZEUS detectors at HERA (full stat) are also presented.

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