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Double Diffraction Dissociation at large $|t|$

H1 Collaboration, DESY

The double diffractive dissociative cross section $\gamma p \to XY$ is measured at large 4-momentum transfer squared $|t|$. The systems X and Y are separated by the largest rapidity gap in the event with all particles on the photon side of the gap ascribed to the system X. Diffractive events are then characterised by $M_X, M_Y \ll W$, where W is the γp centre of mass energy, for the case where M_Y is small. Cross sections are measured differentially in $x_{\mathbb{P}} = (M_X^2 - t)/W^2$. In the range $0.001 < x_{\mathbb{P}} < 0.01$, the shapes of the measured $x_{\mathbb{P}}$ distributions are compared to predictions for standard photoproduction processes and to a model based on the exchange of a strongly interacting colour singlet object at large $|t|$.