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Exclusive dijet production in diffractive deep inelastic scattering at HERA

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The exclusive production of dijets in diffractive deep inelastic lepton-proton scattering has been measured with the ZEUS detector at HERA using an integrated luminosity of 372 pb^{-1} of $e^{\pm}p$ data. The measurement has been performed in the kinematic range $Q^2 > 25\,\mathrm{GeV}^2$, $90 < W < 250\,\mathrm{GeV}$ and $x_{\mathbb{P}} < 0.01$, where Q^2 is the virtuality of exchanged photon, W is the $\gamma^{\star}p$ centre-of-mass energy and $x_{\mathbb{P}}$ is the fraction of the proton momentum taken by the diffractive exchange. Jets have been reconstructed in the photon-Pomeron ($\gamma^{\star} - \mathbb{P}$) centre-of-mass system frame using the exclusive k_T algorithm. The cross section for the exclusive production of dijets is given as a function of the angle between the plane defined by exchanged photon and dijet system and the plane defined by the incoming and scattered lepton momenta in the $\gamma^{*} - \mathbb{P}$ rest frame. It is compared to theoretical predictions of models based on boson-gluon fusion and two-gluon exchange processes.

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