

Contribution ID: 528 Type: Parallel Talk

Studies of the diffractive photoproduction of isolated photons at HERA

Thursday 6 July 2017 10:15 (15 minutes)

The photoproduction of isolated photons has been measured using diffractive events recorded by the ZEUS detector at HERA. Cross sections are evaluated in the photon transverse-energy and pseudorapidity ranges 5 < E_T^{γ} < 15 GeV and

 $-0.7 < \eta^{\gamma} < 0.9$, inclusively and also with a jet with transverse-energy and pseudorapidity in the ranges $4 < E_T^{jet} < 35$ GeV and $-1.5 < \eta^{jet} < 1.8$, using a total integrated electron-proton luminosity of $456 \, \mathrm{pb}^{-1}$. A number of kinematic variables were studied and compared to predictions from the Rapgap Monte Carlo model. An excess of data is observed above the Rapgap predictions for $z_{pom}^{meas} > 0.9$ where z_{pom}^{meas} is the fraction of the longitudinal momentum of the colourless "Pomeron" exchange that is transferred to the photon-jet final state, giving evidence for direct-Pomeron interactions.

Experimental Collaboration

ZEUS

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Session Classification: QCD and hadronic physics

Track Classification: QCD and Hadronic Physics