Abstract 380
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Rapidity Gaps between Jets in Photoproduction at HERA

H1 Collaboration

Photoproduction events which have two or more jets with $E_T > 5$ GeV have been studied in the range of γp centre of mass energy 159 GeV $< W <$ 242 GeV with the H1 detector at HERA. An excess of events with a "rapidity gap" between the two highest E_t jets, over the expectation from non–diffractive processes, is observed. A rapidity gap is defined as the absence between the jets of hadronic energy with $E_t > 400$ MeV. The gap fraction, defined as the ratio of gap to non–gap events as a function of the size in rapidity $\Delta\eta$ of the gap, is observed to fall exponentially up to $\Delta\eta \sim 3$, before reaching a constant value of about 0.1 at large $\Delta\eta$. The excess above the exponential fall off can be interpreted as being due to QCD colour singlet exchange. The proportion of colour singlet exchange in di–jet production is determined and compared with similar observations in hadron–hadron interactions.