

Observation of exclusive diphoton production in Hadron-Hadron collisions

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We present the first observation and cross section measurement of exclusive photon pair production in proton-antiproton collisions at center-of-mass energy of 1.96 TeV using data taken by the Run II Collider Detector at Fermilab.

We select events with two electromagnetic showers, each with transverse energy ET greater than 2.5 GeV and pseudorapidity, $|\eta| < 1.0$, with no other particles detected in the event.

The events are explained as the double pomeron exchange process.

The measured cross section is in agreement with a perturbative QCD calculation.

This process is closely related to exclusive Higgs boson production that could be observed at the LHC.

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