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Measurement of Z^0 production in ep collisions at HERA

Content :

The production of Z^0 bosons in ep collisions at HERA has been searched for with the ZEUS detector using a data sample corresponding to a luminosity of 0.4fb^{-1} . In the SM, this process has a very small cross section of approximately 0.3 pb . The search was done for the decays of the Z^0 to two energetic jets of hadrons. To avoid a large contribution from QCD backgrounds, the event selection was optimized for final states in which no hadronic activity is observed in the forward region of the calorimeter, thus preferentially selecting elastic and quasi-elastic interactions on the proton side. The resulting di-jet invariant mass distribution is presented for the selected event topologies.

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Comments :

These results are presented on behalf of the ZEUS Collaboration