



Contribution ID : 385

Type : **Oral presentation**

## Elastic Z0 production at HERA

*Friday, 4 July 2014 15:00 (15)*

A search for events  $ep \rightarrow ep Z^0$  has been performed in ep collisions at HERA using the ZEUS detector. The search is based on the entire HERA-I and HERA-II data set, amounting to 0.49 fb<sup>-1</sup> of integrated luminosity. The Z<sup>0</sup> was searched in the di-jet decay mode with elastic condition defined by  $\eta_{\text{max}} < 3$ , where  $\eta_{\text{max}}$  is defined as the pseudorapidity of the energy deposit in the calorimeter closest to the proton beam direction. A di-jet mass peak is observed at the Z<sup>0</sup> mass and the number of signal events is extracted from a fit to the mass spectrum. The elastic Z<sup>0</sup> production cross section is determined and compared to the SM prediction.

### Summary

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**Session Classification** : Top-quark and ElectroWeak Physics

**Track Classification** : Top-quark and ElectroWeak Physics