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Inclusive-jet cross sections in NC DIS at HERA and a comparison of the kt, anti-kt and SIScone jet algorithms

Content :

For the first time, differential inclusive-jet cross sections have been measured in neutral current deep inelastic ep scattering using the anti-kt and SIScone algorithms. The measurements were made for boson virtualities $Q^2 > 125 \text{ GeV}^2$ with the ZEUS detector at HERA using an integrated luminosity of 82 pb^{-1} and the jets were identified in the Breit frame. The performance and suitability of the jet algorithms for their use in hadron-like reactions were investigated by comparing the measurements to those performed with the kt algorithm. Next-to-leading-order QCD calculations give a good description of the measurements. Measurements of the ratios of cross sections using different jet algorithms are also presented; the measured ratios are well described by calculations including up to $O(\alpha_s^3)$ terms. Values of $\alpha_s(M_Z)$ were extracted from the data; the results are compatible with and have similar precision to the value extracted from the kt analysis.

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Comments :

This result will be presented on behalf of the ZEUS Collaboration