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Inclusive-Jet Photoproduction at HERA

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Differential inclusive-jet cross sections have been measured in photoproduction for boson virtualities Q2 < 1 GeV2 with the ZEUS detector at HERA using an integrated luminosity of 300 pb-1.
Jets were identified in the laboratory using the kt cluster algorithm in the longitudinally inclusive mode. Cross sections are presented as functions of the jet pseudorapidity, etajet,and the jet transverse energy, Etjet. In addition, measurements of double-differential
inclusive-jet cross sections are presented as functions of Etjet in different regions of etajet. These cross sections have the potential to constrain the gluon density in the proton and the photon when included as input to fits to extract the proton parton distribution functions. Next-to-leading-order QCD calculations give a good description of the measurements. A value of alphas(Mz) has been extracted from the measurements. The energy-scale dependence of the coupling has also been determined.

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