

Jets and α_s at HERA

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Jet cross sections in deep inelastic ep scattering (DIS) and photoproduction were measured with the H1 and ZEUS detectors at HERA using data collected in the years 1999-2007 and corresponding to an integrated luminosity of up to 500 pb⁻¹. Measurements of differential cross sections for inclusive-jet production in DIS and photoproduction are presented together with the tri-jet to di-jet ratio in DIS. Inclusive jet, di-jet and tri-jet cross sections, normalised to the neutral current DIS cross sections, are also measured and presented as functions of Q^2 , jet transverse momentum and proton momentum fraction. All the measurements are well described by perturbative QCD calculations at next-to-leading order corrected for hadronisation effects. QCD analyses of the measured observables were used to extract precise values of the strong coupling constant and test its energy-scale dependence.

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