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Measurement of Internal Jet Structure in Dijet Production in Deep-Inelastic Scattering at HERA

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Internal jet structure in dijet production in deep-inelastic scattering is measured with the H1 detector at HERA. Jets with transverse energies $E_{T,\mathrm{Breit}} > 5$ GeV are selected in the Breit frame employing $k_\perp$ and cone jet algorithms. In the kinematic region of squared momentum transfers $10 < Q^2 \leq 120$ GeV^2 and x-Bjorken values $2{\cdot}10^{-4} \leq x_{\mathrm{Bj}} \leq 8{\cdot}10^{-3}$, jet shapes and subjet multiplicities are measured as a function of a resolution parameter. Distributions of both observables are corrected for detector effects and presented as functions of the transverse jet energy and jet pseudo-rapidity. Dependences of the jet shape and the average number of subjets on the transverse energy and the pseudo-rapidity of the jet are observed. With increasing transverse jet energies and decreasing pseudo-rapidities, i.e. towards the photon hemisphere, the jets are more collimated. QCD models give a fair description of the data.

References

1. H1 Collaboration, C. Adloff *et al*, DESY-98-210 / submitted to Nuc. Phys. B.