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Di-jet Rates in Deep Inelastic Scattering at HERA

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Di-jet event rates have been measured for deep-inelastic scattering in the kinematic domain $5 \lesssim Q^2 \lesssim 100$ GeV^2 and $10^{-4} \lesssim x_{bj} \lesssim 10^{-2}$. The analysis is based on data collected with the H1 detector at HERA in 1994 corresponding to an integrated luminosity of about 2 pb^{-1}. The results have been corrected for detector effects. Jets are defined using a cone algorithm in the photon-proton centre of mass system requiring jet transverse momenta of at least 5 GeV. Di-jet event rates are shown as a function of Q^2 and x_{bj}, and are compared to models and next to leading order calculations based on perturbative QCD. Models of point-like interactions with the photon implementing leading order matrix elements in combination with parton showers fail to descibe the data. NLO calculations, including contributions from direct and resolved virtual photons, provide a good description of the data. The di-jet event rate can also be desribed by a model in leading order by adding a contribution from the resolved photon or by the colour dipole model.