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Determination of the strong coupling at NNLO from jet production in DIS at HERA

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A first determination of the strong coupling α_s in next-to-next-to leading order (NNLO) from inclusive jet and dijet production in deep-inelastic scattering at HERA is presented. The strong coupling is determined in a fit of jet data collected by the H1 experiment in the range of momentum transfer $5.5 < Q^2 < 15000 \text{ GeV}^2$ and jet transverse momenta $p_T > 5 \text{ GeV}$. The running of the strong coupling is probed in a single experiment over one order of magnitude in the renormalisation scale μ_r . NNLO predictions were obtained using the program NNLOJET, where the corresponding calculations are based on antenna subtraction techniques.

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