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QCD Analysis of the combined HERA inclusive data together with HERA jet and charm data

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An extended QCD analysis of the new combined inclusive HERA was performed at NLO, also including HERA data on jet and charm production. This enables the simultaneous measurement of parton distribution functions and the strong coupling using data from HERA alone. The strong coupling is measured to be $\alpha_s(M_Z) = 0.1182 \pm 0.0008(\text{exp}) \pm 0.0005(\text{model/param.}) \pm 0.0012(\text{hadronisation}) + 0.0037-0.0030(\text{scale})$.

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