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Running of the Charm-Quark Mass from HERA Deep-Inelastic Scattering Data

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Combined HERA data on charm production in deep-inelastic scattering have previously been used to determine the charm-quark running mass $m_c(m_c)$ in the MSbar renormalisation scheme. Here, the same data are used as a function of the photon virtuality Q^2 to evaluate the charm-quark running mass at different scales to one-loop order, in the context of a next-to-leading order QCD analysis. The scale dependence of the mass is found to be consistent with QCD expectations.

Experimental Collaboration

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