

Determination of $\alpha_s(m_Z)$ from a fit of the Z-boson transverse momentum distribution measured by CDF to NNLO+NNLL predictions

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The strong-coupling constant $\alpha_s(m_Z)$ is measured from the transverse momentum distribution of Z bosons measured at $\sqrt{s} = 1.96$ TeV with the CDF experiment, using predictions based on qt resummation at NNLO+NNLL, as implemented in the DYTURBO program. The measurement is performed through a simultaneous fit of $\alpha_s(m_Z)$, PDFs, and the non-perturbative Sudakov form factor.

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