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Using Forward-backward Drell-Yan Asymmetry in PDF Determinations

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Measurements of the forward-backward asymmetry in neutral-current Drell-Yan di-lepton production have primarily been used for determinations of the weak mixing angle θ_W.
We investigate the possibility of using the reconstructed forward-backward asymmetry to place constraints on the determination of the parton distribution functions (PDFs). We perform this study using the open-source QCD platform xFitter. We explore the constraints on the flavour structure of quark distributions and the role of appropriate selection cuts on lepton rapidities both near the Z-boson peak and away from it.

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