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PDF sensitivity studies using electroweak processes at LHCb

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We summarise the results from early LHCb data for muon final states produced through the Drell-Yan process via W, Z and gamma* down to a Q2 of 10 GeV2. Extrapolating these results up to the sample sizes expected in the remainder of the 2010 run gives exciting prospects for parton density function studies, which will benefit from LHCb's unique ability to trigger on low momentum objects. Due to the forward acceptance of LHCb x values down to 2 × 10−6 can be probed, where with just 100 pb−1 of data the gluon PDF can be constrained down to 10%.

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