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Towards a W boson mass measurement with LHCb

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LHCb provides unique opportunities to study W and Z boson production at forward rapidities at the LHC. It has recently been suggested that a new measurement of the W boson mass by LHCb would complement measurements by ATLAS and CMS.

All measurements of the W mass at the LHC are susceptible to PDF uncertainties, but there would be a partial cancellation of the overall PDF uncertainty when the LHCb result is included in an average with measurements by ATLAS and CMS.

Here we review measurements of W and Z boson production by LHCb, and report on a new study of the PDF uncertainty on the LHCb measurement of the W mass.

The latter study includes the proposal of a new approach which should reduce the PDF uncertainty by roughly a factor of two with LHCb Run 2 data.

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