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Precision electroweak physics at LHCb

Friday 12 July 2019 17:30 (15 minutes)

he LHCb detector at the LHC offers unique coverage of forward rapidities, allowing the experiment to play an important role in precision measurements of electroweak physics at the LHC. Precision cross-section measurements (from LHC Runs 1 and 2) will be presented. Prospective studies will also be presented, including the potential of a measurement of the W boson mass using the LHCb Run 2 data, where the anti-correlation of theoretical uncertainties with measurements at ATLAS and CMS means that a future measurement offers unique complementarity to the measurements at the other LHC detectors. Also discussed will be prospects for a future measurement of the weak mixing angle at LHCb, building on the existing measurement using Run 1 data. Following major upgrades of the LHCb detector that will enable the collection of integrated luminosities of at least 300/fb, the expected precision in such a measurement is expected to surpass the world average from the LEP and SLD measurements.

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