

Central exclusive production at LHCb

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Collaboration

Abstract content

LHCb is an ideal detector for the investigation of central exclusive production (CEP), as it is fully instrumented between pseudorapidities of 2 and 5, operates in low pile-up conditions and has special low-multiplicity triggers for muons and hadrons. In 2015, a new sub-detector, HeRSChel, consisting of five planes of scintillators was installed on both sides of LHCb in the LHC tunnel in order to veto backgrounds where the proton dissociates. I will review the CEP programme at LHCb and present a new measurement of the CEP of J/ψ and $\Psi(2S)$ mesons in pp collisions at a centre-of-mass energy of 13 TeV. The use of HeRSChel has reduced the backgrounds in the analysis by a factor two compare to previous results and significantly improved the precision of the measurement. Its impact will be felt in future CEP analyses in pp , proton-lead and lead-lead collisions.

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