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Central exclusive production at LHCb: current analyses and future detectors

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Central exclusive production (CEP) is a mechanism by which a final state is produced in isolation at central rapidity in an elastic collision. CEP provides a uniquely clean environment in which to carry out meson spectroscopy, and to search for evidence of phenomena such as gluon saturation. We introduce CEP and discuss the suitability of the LHCb detector to its study. LHCb measurements of central exclusive charmonium production using dimuon final states are presented, and ongoing analyses extending these measurements to hadronic final states discussed. The predominant background to CEP analyses at LHCb is contamination from inelastic production; HeRSCheL, a system of forward detectors to be installed to veto this background, is presented.

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