

Abstract

Central exclusive production (CEP) processes in high-energy proton collisions offer a very promising framework within which to study both novel aspects of QCD and new physics signals.

We focus on the charmonium bottomonium and dimeson production applying the Durham pQCD-based model of CEP for evaluation of the rates and proton momentum correlations at the Tevatron and LHC energies and compare the results with the existing experimental data. Two-body decays of charmonia, which are particularly relevant for the scalar case are considered in detail.

We also present the results of a recent novel application of the 'hard exclusive' PT formalism to the dimeson CEP, which opens a way to probe the gluon component of the meson wave-functions. Special advantages of the LHCb detector for such studies are emphasized.