

## Exclusive dimuon measurements with LHCb

We report on studies of exclusive dimuon production using LHCb experimental data.

Exclusively produced muon pairs can be produced by two photon fusion (a QED process ideally suited to obtaining a precise integrated luminosity measure), or through resonances produced by pomeron-photon fusion or double pomeron exchange. We present cross-section measurements for exclusive dimuon production, and the first observations at a proton-proton collider of exclusive  $J/\psi$ ,  $\psi'$  and  $\chi_c$  states, obtained with 37 pb<sup>-1</sup> of data at centre of mass energy of 7 TeV. The resolution of the LHCb detectors allow the  $\chi_{c0}$ ,  $\chi_{c1}$  and  $\chi_{c2}$  states to be separated. We compare our results to theoretical predictions.

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