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Charmonia photo-production in ultra-peripheral and peripheral PbPb collisions with LHCb

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In 2018, LHCb recorded $\sim 210 \text{ microbarn}^{-1}$ integrated luminosity of PbPb collisions at $\sqrt{s_{NN}} = 5.02 \text{ TeV}$. With an increase of the luminosity by a factor 20 compared to the previous 2015 PbPb dataset, precise measurements on photo-produced charmonia in ultra-peripheral collisions are foreseen. Moreover, the great momentum resolution of the detector allows to study photo-produced J/ψ in collisions with a nuclear overlap. This new type of probe is sensitive to the geometry of the collisions but also to the electromagnetic field of the Pb nuclei. In this talk, we present the latest results on photo-production obtained by LHCb measurements in peripheral and ultra-peripheral PbPb collisions.

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