

Results of Ultraperipheral collisions with CMS

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Ultraperipheral collisions (UPCs) of heavy ions or hadrons involve long range electromagnetic interactions at impact parameters larger than sum of their radii where hadronic interaction is largely suppressed and the exchanged photon materializes into $q\bar{q}$ bound state after interacting with the gluonic field of the target proton or ion. Photoproduction of heavy vector mesons (J/ψ , Upsilon) thus provide direct information on the gluon distribution functions in the nucleon/nucleus at very low values of Bjorken- x . The CMS experiment has excellent capabilities for the measurement of the heavy vector mesons in the dimuon decay channel using the tracker and the muon chambers. The measured coherent J/ψ photoproduction cross section in ultraperipheral Pb-Pb collisions using 2011 PbPb data and Upsilon photoproduction in ultraperipheral pPb collisions during 2013, will be presented. The prospects for future measurements using the data collected in the 2015 PbPb run will be described.

Collaboration

CMS

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