

Results of Ultraperipheral heavy ion collisions with the CMS experiment

Thursday, 14 December 2017 10:40 (15 minutes)

Ultraperipheral collisions (UPCs) of heavy ions or hadrons involve long range electromagnetic interactions at impact parameters larger than the sum of their radii where hadronic interactions are largely suppressed and they interact electromagnetically via emission of quasi-real photons. Photoproduction of heavy vector mesons (J/ψ , Upsilon) provides direct information on the gluon distribution functions in the nucleon/nucleus at very low values of Bjorken- x . The measured coherent J/ψ photoproduction cross section in ultraperipheral Pb-Pb collisions using 2011 PbPb data and Upsilon photoproduction in ultraperipheral p-Pb collisions using 2013 data will be presented. Two photon processes in UPC collisions provide a wide range of opportunities from testing fundamental Quantum Electro Dynamics (QED) to searches for physics beyond the Standard Model (SM). The prospects of photon-induced measurements with heavy ions using Run 2 data at the LHC will be also discussed.

Primary author: DUTTA, Dipanwita (Bhabha Atomic Research Centre (IN))

Presenter: DUTTA, Dipanwita (Bhabha Atomic Research Centre (IN))

Session Classification: WG6: Interactions with Nuclei