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Probing the gluonic initial state with inclusive dijets in pPb and exclusive dijets in ultra-peripheral PbPb collision at $\sqrt{s_{NN}} = 5.02$ TeV with the CMS experiment

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Dijet processes can be used in several ways to probe the nuclear initial state. Exclusive dijet photoproduction in ultra-peripheral heavy-ion collisions has recently been suggested as a probe of the gluon Wigner distribution. In particular, the angular correlation of exclusive dijets can assess the azimuthal anisotropy of the gluon distribution in the nuclear target. In this talk we present, for the first time, the measurement of the angular correlations of dijets in ultra-peripheral PbPb collisions at $\sqrt{s_{NN}} = 5.02$ -TeV with the CMS experiment. The dependence of the second harmonic of the angular distribution as a function of the vectorial sum of the leading and subleading jets will be discussed. In addition, the pseudorapidity of the inclusive dijet system in pPb collisions is a probe of the nuclear parton distribution function (nPDF) of the gluon: the recent CMS result will be presented, and its impact on nPDF models will be discussed.

Collaboration (if applicable)

CMS

Track

Initial State

Contribution type

Contributed Talk

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