

## Quarkonium measurements in pPb collisions at the LHC with the ALICE experiment

In heavy-ion collisions at the LHC, the ALICE experiment is studying nuclear matter at very high energy density where the formation of a Quark Gluon Plasma (QGP) is expected. Quarkonium production is an important probe to characterize the properties of the QGP as it gives access to the early stages of the collision.

In 2010 and 2011, the LHC provided Pb-Pb collisions at  $\sqrt{s} = 2.76$  TeV per nucleon pair and pp collisions at  $\sqrt{s} = 2.76$  TeV. It was found that the  $J/\psi$  production in Pb-Pb per binary nucleon-nucleon collision is suppressed as compared to its production in pp collisions. However, a part of the suppression may come from initial and/or final state nuclear matter effect. Large theoretical uncertainties on these effects does not allow us to quantify the amount of suppression as due to the deconfined state created in Pb-Pb collisions.

Measurement of  $J/\psi$  production in pPb and Pb-p collisions, foreseen for the end of this year, will reduce the uncertainties on these effects. Quarkonia can be reconstructed in the dimuon channel at forward rapidity and down to zero transverse momentum with the ALICE Muon spectrometer. We will report on the expected yields and measurements in pPb and Pb-p, based on MonteCarlo simulation studies, for quarkonium production at forward rapidity in ALICE.

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