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Υ production in p-Pb and Pb-Pb collisions with ALICE at the LHC

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ALICE (A Large Ion Collider Experiment) is devoted to the study of heavy-ion collisions at LHC energies. It is predicted that a deconfined state of nuclear matter, the Quark-Gluon Plasma (QGP), is created in such collisions. The production of heavy quarkonia is modified in the presence of a QGP compared to the production in pp and p-Pb collisions. In particular, a suppression by colour screening has been observed at SPS, RHIC and LHC energies. In addition, the measurements of charmonium production performed in Pb-Pb collisions at the LHC point to the presence of regeneration phenomena occurring in the QGP or at the phase boundary. Such effects are expected to be much smaller for bottomonia than for charmonia, which makes the former an ideal probe to study the suppression mechanism in heavy-ion collisions at LHC energies. In order to better address the hot and dense medium effects on bottomonium production, the contribution of cold nuclear matter effects is estimated studying proton-nucleus collisions.

In ALICE, Υ production is measured in the dimuon decay channel, down to zero transverse momentum and in the rapidity range $2.5 < y < 4$.

The recent ALICE results on Υ production in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be presented and compared with previous measurements at $\sqrt{s_{NN}} = 2.76$ TeV. A comparison with theoretical calculations will be performed as well. Results obtained in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will also be discussed.

Summary

Presentation type

Oral

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