Contribution ID: **488** Type: **Contributed talk**

# Upsilon production measurements in pp, p-Pb and Pb-Pb collisions with ALICE

*Tuesday, 29 September 2015 09:40 (20 minutes)*

Quarkonium, i.e. bound states of heavy quark and antiquarks ($c\bar{c}$ or $b\bar{b}$), are important observables to study the properties of nuclear matter at extreme energy-densities, where Lattice QCD calculations predict a phase transition from hadronic matter to the Quark-Gluon Plasma (QGP). In high energy heavy-ion collisions, the QGP can be studied using the suppression of bottomonium production, due to the color screening, with respect to the proton-proton results scaled by the number of binary collisions. However, this measurement can be biased by the possible presence of cold nuclear matter effects, which can be estimated using proton-nucleus collisions, where the QGP formation is not expected.

ALICE measures bottomonium production at forward rapidity ($2.5 \leq y \leq 4$) down to zero transverse momentum via the dimuon decay channel. In this presentation, the nuclear modification factor of $\Upsilon$ measured in Pb-Pb collisions at $\sqrt{s_{\rm NN}}$ = 2.76 TeV and p-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV will be discussed. ALICE measurements of the bottomonium production for pp collisions will be also presented. The results will be compared to other LHC experimental measurements and to theoretical calculations.

## On behalf of collaboration:

ALICE

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**Session Classification:** Quarkonia II

**Track Classification:** Quarkonia