

Quarkonium production in pp collisions with ALICE at the LHC

Quarkonia are mesons formed of either a charm and anti-charm quark pair (J/ψ , $\psi(2S)$), or a beauty and anti-beauty quark pair ($\Upsilon(1S)$, $\Upsilon(2S)$ and $\Upsilon(3S)$). In high-energy hadronic collisions such as those delivered by the LHC between 2010 and 2015, quarkonium production results from the hard scattering of two gluons in a process which occurs very early in the collision followed by the hadronization of the heavy quark pair in a bound state. In pp collisions, quarkonium measurements help characterize production mechanisms. These same measurements also provide a reference baseline for p-A and A-A measurements which in turn quantify cold and hot nuclear properties of the Quark-Gluon Plasma (QGP). While charmonia are produced rather abundantly in such collisions, interpreting the measurement of their inclusive production is complicated by the presence of a sizable non-prompt contribution from the decay of b-hadrons. Bottomonia on the other hand have much smaller production cross sections but no non-prompt contribution. Moreover, their heavier mass makes them more suitable for perturbative QCD calculations. In this presentation we will report on forward rapidity ($2.5 < y < 4$) J/ψ , $\psi(2S)$ and Υ latest results in the di-muon decay channel performed by ALICE in pp collisions at a center of mass energy $\sqrt{s} = 13$ TeV, using data collected at the LHC during the 2015 run and corresponding to an integrated luminosity of approximately 3.5 pb^{-1} . These measurements will be compared to corresponding results performed by other LHC experiments at the same energy, to results obtained at lower energies ranging from $\sqrt{s} = 2.76$ to $\sqrt{s} = 8$ TeV, as well as to theoretical models.

Preferred Track

Quarkonia

Collaboration

ALICE

Primary author: PORTEBOEUF, Sarah (Univ. Blaise Pascal Clermont-Fc. II (FR))

Presenter: PORTEBOEUF, Sarah (Univ. Blaise Pascal Clermont-Fc. II (FR))

Session Classification: Poster Session