

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

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The hot and dense nuclear matter created in heavy ion collisions at relativistic energies consists in its early stage

of a plasma of deconfined quarks and gluons (QGP).

Charmonium production is a very sensitive probe to both the conditions of the QGP medium, such as energy density and temperature,

and to non-medium conditions like total charm cross-section production and cold nuclear matter (CNM) effects.

The strong J/psi suppression observed in central nucleus-nucleus collisions at RHIC and SPS has been

proposed as evidence for the QCD analogue of the Debye screening effect. At the LHC, the wealth of results available for Pb-Pb collisions

at 2.76 TeV per nucleon suggests that the formation of charmonium via quark (re)combination in medium or at the

chemical freeze-out gives a significant contribution to the total yields. The recent p-Pb results on charmonium production allows

for an estimation of the CNM effects which strengthens the support for models including the (re)combination effect

in Pb-Pb collisions.

Covering a large rapidity range ($|y| < 0.9$ and $2.5 < y < 4.0$) down to zero transverse momentum, ALICE is capable to provide

both differential and total cross-section measurements for J/psi, which are crucial for disentangling the various

contributions to the observed results. We will present an overview of the ALICE data on J/psi

production in Pb-Pb collisions at mid- and forward-rapidity and the latest measurements on J/psi and psi(2S)

production in p-Pb collisions at 5.02 TeV. The current theoretical understanding of these data will be discussed using comparisons to model calculations.

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