

Nuclear modification of J/ψ production in Pb–Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV

Monday, 28 May 2012 14:20 (20 minutes)

Heavy quarkonium states, such as the J/ψ , are expected to provide essential information on the properties of high-energy heavy-ion collisions where the formation of a Quark-Gluon Plasma is expected. The impact on the J/ψ production of such a hot and dense medium formed in the early times of the collision has been extensively studied at SPS and RHIC energies. It is expected that due to colour screening mechanisms J/ψ production is suppressed in a plasma of quarks and gluons. At LHC energies, however, charm is produced abundantly in central Pb–Pb collisions allowing for scenarios where originally uncorrelated charm and anti-charm quarks (re)combine at the phase boundary. Measuring the J/ψ production at LHC will help to disentangle between the different mechanisms.

ALICE is the dedicated heavy-ion experiment at the LHC. Due to the unique particle identification capabilities of the central barrel detectors ($|\eta| < 0.9$), J/ψ can be measured in the di electron channel in the very demanding environment of central Pb–Pb collisions at LHC. In addition J/ψ is measured at forward rapidity ($2.5 < y < 4$) with a dedicated muon spectrometer. ALICE is the only LHC experiment with a J/ψ acceptance that reaches down to $p_t = 0$ at both mid- and forward-rapidity. First results on the nuclear modification factor of the inclusive J/ψ production at mid-rapidity in Pb–Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV will be presented. The mid-rapidity measurement is complemented with the results obtained at forward-rapidity.

Primary author: WIECHULA, Jens (Physikalisches Institut, Universität Tübingen)

Presenter: WIECHULA, Jens (Physikalisches Institut, Universität Tübingen)

Session Classification: Parallel IA: Quarkonia