FAIRNESS

**3-8 September 2012,
Hersonissos,
Greece**

Contribution ID: **50**   Type: **not specified**

J/ψ production in Pb-Pb collisions at $\sqrt{s_{NN}}$ =~2.76 TeV

Thursday, 6 September 2012 11:30 (30 minutes)

The hot and dense nuclear matter created in nuclear collisions at relativistic energies consists of a plasma of deconfined quarks and gluons.
Due to their large mass, the charm quarks are mainly formed in the first instants of
the nuclear collision and will consequently experience the full history of the system.
It was predicted that the strongly bound J/ψ state will be suppressed in the hot and deconfined quark-gluon plasma due to the color screening effect. This effect was already observed
in Pb-Pb and In-In collisions at the SPS and in Au-Au collisions at RHIC.
It was also predicted that
high production yields of charm quarks in nucleus-nucleus collisions at RHIC and especially at LHC energies will
make possible (re)combination posible, thus leading to J/ψ enhancement compared to lower energy
nuclear collisions and to pp collisions.
ALICE measures the J/ψ at mid-rapidity ($|y| < 0.9$) and at forward-rapidity ($2.5 < \eta < 4.0$) down to zero transverse momentum. The reconstruction
is performed using the J/ψ decay into the di-electron and di-muon channels at mid- and forward-rapidity respectively.
The electron identification is done using
energy loss in gaseous detectors (the Time Projection Chamber and the Transition Radiation Detector)
and the time-of-flight method (Time Of Flight detector). The muons are reconstructed using the Forward Muon Spectrometer.
We will present the J/ψ nuclear modification factor as a function of the collision centrality, transverse momentum and rapidity.
Discussions and comparisons to theoretical calculations will be provided.
First results and perspectives on the J/ψ production with respect to the event plane (elliptic flow) will also be shown.

Primary author: Dr ARSENE, Ionut Cristian, on behalf of the ALICE Collaboration

Presenter: Dr ARSENE, Ionut Cristian, on behalf of the ALICE Collaboration

Session Classification: Talks