

# J/psi production measurements in pp and PbPb collisions in the ALICE experiment at the LHC

*jeudi 21 juillet 2011 17:45 (15 minutes)*

ALICE is the experiment dedicated to heavy-ion studies at the LHC and, in particular, it aims at a comprehensive study of the hot and dense colour-deconfined state of matter called Quark-Gluon Plasma.

Quarkonia resonances are considered as powerful probes of the deconfined phase since the heavy quark pairs are produced in the early stages of the collision and their bound states are very sensitive to the coloured medium which they traverse.

The reference for heavy-ion studies is given by pp collision measurements, which are also interesting per se for addressing unresolved issues in the description of quarkonia hadroproduction. In particular the study of the pT distribution and of the polarization of quarkonia allow interesting tests of the currently available theoretical models.

The ALICE experiment was designed to perform the detection of J/psi resonances, down to pT=0, both in the di-electron (at mid-rapidity:  $|y| < 0.9$ ) and di-muon (at forward-rapidity:  $2.5 < y < 4$ ) decay channels and it has collected J/psi samples with proton beams colliding at  $\sqrt{s} = 7$  and 2.76 TeV and with lead beams colliding at 2.76 TeV per nucleon pair.

The results on the differential (pT and y) cross-sections for inclusive J/psi production in pp collisions at the two energies will be discussed as well as the current status of the J/psi polarization analysis. For PbPb collisions preliminary results on the nuclear modification factor ( $R_{AA}$  and  $R_{CP}$ ) will be shown and compared with results from previous experiments.

**Author:** M. BIANCHI, Livio (INFN Torino - Universita' di Torino)

**Orateur:** M. BIANCHI, Livio (INFN Torino - Universita' di Torino)

**Classification de Session:** Ultrarelativistic Heavy Ions