Contribution ID: **867**   Type: **Experimental poster**

Nuclear modification factors of prompt and non-prompt J/ψ in Pb−Pb collisions at √ sNN= 5.02 TeV at midrapidity with ALICE

Tuesday 17 May 2022 19:00 (1 hour)

Heavy quarks are considered excellent probes to study the properties of the state of matter where quarks and gluons are deconfined, known as quark-gluon plasma (QGP). The QGP is expected to be formed in ultrarelativistic nuclear collisions. Non-prompt J/ψ measurements are important to investigate the parton energy loss in the hot medium and its quark mass dependence, as they provide additional constraints to extract heavy-quark diffusion coefficients from experimental data. In addition, the prompt J/ψ production provides a direct comparison with models that include (re-)generation, which is found to be the dominant production mechanism at low transverse momentum (p_T) and in central collisions at the LHC. ALICE has unique tracking and particle identification capabilities down to very low momentum at midrapidity ($|y| < 0.9$), enabling the separation of prompt and non-prompt J/ψ down to $p_\mathrm{T} \sim 1.5$ GeV/c in Pb−Pb collisions. In this contribution, recent ALICE results on nuclear modification factors (R_AA) of prompt and non-prompt J/ψ, reconstructed at midrapidity in the dielectron decay channel, as a function of p_T and centrality will be presented and compared with theoretical predictions. Presented results are obtained by analyzing data from Pb−Pb collisions collected at $\sqrt{s_\mathrm{NN}}$ = 5.02 TeV during the LHC Run 2. Moreover, results will be compared with similar LHC measurements, available at higher p_T.

Author: Mr SHARMA, Himanshu (Polish Academy of Sciences (PL))

Presenter: Mr SHARMA, Himanshu (Polish Academy of Sciences (PL))

Session Classification: Poster Session I

Track Classification: Heavy Ions