Contribution ID : **115** Type : **Oral Presentation**

Possible Charmonia suppression in high-multiplicity proton-proton collisions at the LHC energies

Wednesday, 16 November 2022 16:50 (20)

Proton–proton (pp) collision has been considered a baseline to understand the formation of the primordial matter, the quark-gluon plasma in relativistic heavy-ion (AA) collisions. However, recent experimental findings show QGP-like phenomena in ultra-relativistic (TeV) pp collisions. Such findings require a cautious study of the system produced in pp collisions at relativistic energies. In this work, we investigate the charmonium production in pp collisions at $\sqrt{s}$= 5.02, 7 and 13 TeV energies. Further, we obtain net charmonia yield at various event multiplicities using our UMQS model, which includes color screening, gluonic dissociation, collisional damping, and regeneration mechanisms. Using the UMQS model, we try to explain the normalized J/ψ yield against the normalized charged multiplicity and compare it with the data available for 7 and 13 TeV pp collisions. Here we obtain a net suppression of charmonia at high-multiplicity events, indicating the possible existence of quark-gluon plasma in pp collisions. Details of the model ingredients, method of analysis, and important results will be discussed.

Primary author(s) : SINGH, Captain Rituraj (Birla Institute of Technology and Science, Pilani); Mr DEB, Suman (IIT Indore); SAHOO, Raghunath (Indian Institute of Technology Indore (IN)); ALAM, Jane (VECC,1/AF Bidhan Nagar, Kolkata)

Presenter(s) : SINGH, Captain Rituraj (Birla Institute of Technology and Science, Pilani)

Session Classification : Day 2: Session 4

Track Classification : Heavy flavor and Quarkonium production