



Contribution ID: 32

Type: Oral

Recent results of Upsilon production measured with the STAR experiment

Wednesday, 9 September 2020 11:50 (20 minutes)

Heavy-ion collisions allow to recreate conditions present in the universe shortly after the Big Bang when the quark-gluon plasma can be formed. The properties of such plasma can be studied using Upsilon mesons. Each of Upsilon states is expected to dissociate at a different temperature reached in the plasma, through Debye-like screening of color charges. Thus, their production yields are suppressed to different levels with respect to the yield in p+p collisions. Additional cold nuclear matter effects can be studied in p+A or d+A collisions. Furthermore, the production mechanism of these heavy mesons is not fully understood and this can be studied in p+p collisions as well.

In this talk, we will present an overview of recent measurements on the production of Upsilon states by the STAR experiment. These include a comprehensive study performed in Au+Au, p+p, and p+Au collisions at $\sqrt{s} \text{ NN} = 200 \text{ GeV}$ as well as p+p collisions at $\sqrt{s} = 500 \text{ GeV}$.

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Session Classification: Parallel sessions