

# Strangeness in Quark Matter 2019



Contribution ID: 124

Type: **Poster**

## $\Upsilon$ production in p+p collisions at STAR

*Tuesday 11 June 2019 18:45 (2 hours)*

Suppression of the production yield of  $\Upsilon$  states in heavy-ion collisions relative to expectation from p+p collisions is a tool for studying the properties of quark-gluon plasma. Such suppression is expected to be caused by Debye-like screening of color charges happening at a high temperature in the plasma. In order to correctly interpret this effect, the  $\Upsilon$  production mechanism itself has to be well understood. This is still an open question which can be studied in p+p collisions. Recently, an interesting strong dependence of normalized quarkonium production yields on normalized charged particle multiplicity has been observed. By studying such a dependence for  $\Upsilon$  an insight can be gained into the interplay of hard and soft QCD processes affecting the quarkonium production.

This poster will present the results of  $\Upsilon$  production measurements in p+p collisions from the STAR experiment. The  $\Upsilon$  rapidity distributions will be shown both at  $\sqrt{s} = 200$  GeV and  $\sqrt{s} = 500$  GeV. The data at  $\sqrt{s} = 500$  GeV allowed the separation of  $\Upsilon(1S)$  and  $\Upsilon(2S + 3S)$  and to obtain the corresponding transverse momentum spectra. The cross section ratios will be presented. Finally the normalized  $\Upsilon(1S)$  yield is studied as a function of normalized charged particle multiplicity. All the presented results will be compared to theoretical production models.

### Collaboration name

STAR

### Track

Heavy Flavour

**Primary author:** KOSARZEWSKI, Leszek (Czech Technical University in Prague)

**Presenter:** KOSARZEWSKI, Leszek (Czech Technical University in Prague)

**Session Classification:** Poster session with "aperitivo"