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Measurement of Υ in p+p collisions in the STAR experiment

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Quarkonium suppression was proposed as a signature of quark-gluon plasma(QGP) formation.

Different members of the quarkonia family are expected to melt at different temperatures providing an estimate of the temperature reached in QGP.

The Υ states offer a clean probe of QGP.

Previous measurements at RHIC focused on colliding system and centrality dependence of Υ nuclear modification factor R_{AA} .

The ΥR_{AA} as a function of p_T will provide additional information about its interaction with the QGP, which requires a p_T spectrum in p+p as a baseline.

Measurement of Υp_T spectrum in p+p collisions at $\sqrt{s} = 500 \text{ GeV}$ may provide such a baseline with a high precision.

It can be rescaled based on $pQCD$ calculations and used as a baseline for Au+Au collisions at $\sqrt{s_{NN}} = 200 \text{ GeV}$.

In this presentation, the status of Υ measurements in p+p collisions at $\sqrt{s} = 500 \text{ GeV}$ in the STAR experiment will be presented.

In addition the future possibilities, thanks to recent upgrades of the STAR detector, will be discussed. With the help of Muon Telescope Detector(MTD) it may be possible to measure $\Upsilon 1S, 2S$ and $3S$ states separately.

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