

**QPT 2021**

**Guiyang, China**

Contribution ID: 10

Type: not specified

## **Lifetime measurements of ${}^3_{\Lambda}H$ and ${}^4_{\Lambda}H$ in Au+Au Collisions at $\sqrt{s_{NN}} = 7.2$ GeV from STAR fixed target mode experiment**

Hypernuclei are bound nuclear systems of non-strange and strange baryons, i.e. nucleons and hyperons. As such, hypernuclei are correlated hyperon-baryon systems and therefore provide direct access to study the hyperon–nucleon (Y-N) interaction. Production of hypernuclei in collider systems provides an experimental avenue for studying the Y-N interaction.  $\Lambda$  hypernuclei, such as  ${}^3_{\Lambda}H$  and  ${}^4_{\Lambda}H$ , are usually understood as a weakly bound system of a  $\Lambda$  and a nucleus. According to this concept, the  $\Lambda$  maintains its identity even if embedded in a system of other nucleons. Since the lifetime of a hypernucleus depends on the strength of the Y-N interaction, precise lifetime measurements of hypernuclei help us to understand the Y-N interaction.

In this talk, we will present the first lifetime measurements of  ${}^3_{\Lambda}H$  and  ${}^4_{\Lambda}H$  in Au+Au Collisions at  $\sqrt{s_{NN}} = 7.2$  GeV, recorded by the STAR experiment with a fixed target mode in the year 2018.

**Primary author:** Ms LI, Xiujun (USTC)

**Presenter:** Ms LI, Xiujun (USTC)