

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

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

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