

# Recent hypernuclei measurements from STAR

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Hypernuclei are bound states of nucleons and hyperons. The hyperon-nucleon ( $Y$ - $N$ ) interaction is an important ingredient, not only in the equation-of-state (EoS) of astrophysical objects such as neutron stars, but also in the description of the hadronic phase of heavy-ion collisions. Precise measurements of hypernuclei intrinsic properties, flow behavior and production yields in heavy-ion collisions may shed light on their production mechanisms and the strength of the  $Y$ - $N$  interaction.

Recently, a series of new and precise hypernuclei measurements are carried out at STAR utilizing high statistical data taken from RHIC Beam Energy Scan Phase-II program in 2018-2021. In this talk, we will present latest measurements on light hypernuclei ( ${}^3_{\Lambda}\text{H}$ ,  ${}^4_{\Lambda}\text{H}$  and  ${}^4_{\Lambda}\text{He}$ ) lifetime and  $\Lambda$  separation energy  $B_{\Lambda}$  from STAR. We will also report first measurements on directed flow ( $v_1$ ) and production yields of  ${}^3_{\Lambda}\text{H}$  and  ${}^4_{\Lambda}\text{H}$  in Au+Au  $\sqrt{s_{NN}} = 3$  GeV collisions. Physics implications and model comparisons will be discussed.