

1 Latest Results on Lifetimes and Binding Energies of $A = 3, 4$
2 Hypernuclei from STAR

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5 The hyperon-nucleon (Y-N) interaction is an important ingredient in the description of
6 the equation-of-state of high-baryon-density matter. Light hypernuclei ($A = 3, 4$), being
7 simple Y-N bound states, are cornerstones of our understanding of the Y-N interaction.
8 Precise measurements of the lifetimes and binding energies of light hypernuclei are of
9 particular interest.

10 Light hypernuclei are expected to be abundantly produced in intermediate to low en-
11 ergy heavy-ion collisions due to the high baryon density. As a result, the STAR Beam
12 Energy Scan Phase II program, spanning an energy range of $\sqrt{s_{NN}} = 3.0 - 27.0$ GeV, is
13 particularly suited for hypernuclei studies. In this talk, recent results on the lifetimes of
14 ${}^3_{\Lambda}\text{H}$, ${}^4_{\Lambda}\text{H}$, ${}^4_{\Lambda}\text{He}$ measured in $\sqrt{s_{NN}} = 3.0$ and 7.2 GeV Au+Au collisions will be presented.
15 The binding energies of ${}^4_{\Lambda}\text{H}$, ${}^4_{\Lambda}\text{He}$ measured in $\sqrt{s_{NN}} = 3.0$ GeV Au+Au collisions will also
16 be presented. These results will be compared to previous measurements and theoretical
17 calculations, and the physics implications will be discussed.

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