

1 Recent measurements of hypernuclei production in Au+Au collisions at
2 $\sqrt{s_{\text{NN}}}$ = 3.0 and 7.2 GeV with the STAR experiment at RHIC

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6 Abstract

7 The hyperon-nucleon (Y-N) interaction is important for the equation-of-state of
8 astrophysical objects such as neutron stars and also for the description of the
9 hadronic phase of heavy-ion collisions. The determination of Lambda binding
10 energies in hypernuclei can aid the understanding of (Y-N) interactions. Heavy-ion
11 collisions provide a unique laboratory to investigate the (Y-N) interaction in finite
12 temperature and density regions through the measurements of hypernuclei
13 lifetimes, production yields, etc. We present selected results on hypernuclei
14 $^3_{\Lambda}\text{H}$ and $^4_{\Lambda}\text{H}$, in Au+Au collisions at
15 $\sqrt{s_{\text{NN}}}$ = 3.0 and 7.2 GeV. In particular, results will be shown on
16 lifetimes in Au+Au collisions at $\sqrt{s_{\text{NN}}}$ = 3.0 GeV and 7.2 GeV.
17 Furthermore results on yields and flow measurements of hypernuclei in Au+Au
18 collisions at $\sqrt{s_{\text{NN}}}$ = 3.0 GeV will be shown. In addition
19 measurements of masses and Lambda binding energies of $^3_{\Lambda}\text{H}$
20 and $^4_{\Lambda}\text{H}$ in Au+Au collisions at $\sqrt{s_{\text{NN}}} = 3.0$ will
21 be discussed. The data are part of the Beam Energy Scan program at RHIC and
22 have been taken by the STAR experiment with the fixed target mode.