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First observation of $^{4}\mathrm{H}$ in heavy-ion collisions at RHIC

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Matter-antimatter asymmetry is a precondition necessary to explain the existence of our world made predominately of matter over antimatter. Antimatter is rare in the current universe making it difficult to study, but the Relativistic Heavy-Ion Collider (RHIC) provides us a unique opportunity to study antimatter with high-energy nuclear-nuclear collisions.

In this talk, we will report the first observation of ^{4}H with the STAR experiment at RHIC. ^{4}H is the heaviest anti-hypernucleus ever observed in experiments. Its observation will bring new opportunities for the study of matter-antimatter asymmetry. We will also report the various production yield ratios among (anti-)hypernuclei and (anti-)nuclei, as well as the lifetime measurements of ^{3}H, ^{3}H, ^{4}H, and ^{4}H.

Present via

Online

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