Directed flow of ${}^{4}_{\Lambda}$He and ${}^{5}_{\Lambda}$He in Au+Au collisions at $\sqrt{s_{NN}}$ = 3.0 GeV at RHIC

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Studying hyper-nuclei yields and their collectivity can shed light on their production mechanism as well as the hyperon-nucleon interactions. Heavy-ion collisions from the RHIC beam energy scan phase II (BES-II) provide an unique opportunity to understand these at high baryon densities.

In this poster, we present the first measurement of directed flow (v_1) for ${}^{4}_{\Lambda}$He and ${}^{5}_{\Lambda}$He from fixed-target Au+Au collisions at $\sqrt{s_{NN}}$ = 3.0 GeV, made possible by the collection of 2 billion minimum-bias events by the STAR experiment during BES-II. The rapidity (y) dependence of the ${}^{4}_{\Lambda}$He and ${}^{5}_{\Lambda}$He v_1 are studied in mid-central collisions. The results are compared to that of other hyper-nuclei and light-nuclei. Finally, these results are compared with calculations from a hadronic transport model.