



Contribution ID: 684

Type: Poster

# Light Nuclei Production in Au+Au Collisions at $\sqrt{s_{NN}}$ = 14.6 and 19.6 GeV from RHIC BES-II

*Tuesday 5 September 2023 17:30 (2h 10m)*

In high-energy nuclear collisions, the light nuclei production is sensitive to the temperature and density of the system at freeze-out. It is also predicted to be sensitive to local baryon density fluctuations and can be used to probe the QCD phase transition. The second phase of Beam Energy Scan (BES-II) program at RHIC was completed in 2021. The high-statistics data recorded by the STAR experiment provide a unique opportunity to carry out high-precision measurements on the light nuclei production.

In this poster, we will report the results of the centrality and transverse momentum dependence of proton(p), deuteron(d) and  $^3\text{He}$  production in Au+Au collisions at  $\sqrt{s_{NN}} = 14.6$  and 19.6 GeV measured by the STAR experiment. We will also present the centrality dependence of coalescence parameters ( $B_2(\text{d})$  and  $B_3(^3\text{He})$ ) and particle ratios ( $N_{\text{d}}/N_{\text{p}}$  and  $N_{^3\text{He}}/N_{\text{p}}$ ), and discuss their physics implications.

## Category

Experiment

## Collaboration (if applicable)

STAR RHIC

**Author:** JIN, Yixuan (Central China Normal University)

**Presenter:** JIN, Yixuan (Central China Normal University)

**Session Classification:** Poster Session

**Track Classification:** Critical point searches