



Contribution ID: 421

Type: Poster

## Mean $p_T$ fluctuations in 3.0 GeV fixed-target collisions from the STAR experiment

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

The mean  $p_T$  fluctuations in heavy-ion collisions can be related to temperature fluctuations which quantify the specific heat of the system. Any deviations from the Hadron Resonance Gas model as a function of the incident energy can be interpreted as a possible signal of criticality. In this poster we present the first efficiency corrected charged particle event-by-event mean  $p_T$  fluctuations from central Au+Au collisions at  $\sqrt{s_{NN}} = 3$  GeV in the STAR experiment. Mean  $p_T$  fluctuations are calculated for different acceptance windows in pseudorapidity and compared with the previous BES-I results at  $\sqrt{s_{NN}} = 19.6, 62.4, 130,$  and  $200$  GeV, as well as the results from transport model at  $\sqrt{s_{NN}} = 3$  GeV. We also discuss the effects of primordial protons on the mean  $p_T$  fluctuations.

### Category

Experiment

### Collaboration (if applicable)

STAR Collaboration

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**Session Classification:** Poster Session

**Track Classification:** Collective Dynamics