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Semi-inclusive hadron+jet measurement in Ru+Ru and Zr+Zr collisions at $\sqrt{s_{NN}} = 200$ GeV in STAR

Hadron-triggered semi-inclusive recoil jets (h+jet) serve as an effective probe for studying the properties of quark-gluon plasma (QGP), as they experience jet quenching in the QGP. This observable is increasingly used across various systems due to its ability to probe jets over a broad phase space, including low transverse momenta (p_T) and large radii. Measurements of h+jet in relatively smaller isobar collision systems (Zr+Zr and Ru+Ru) compared to other collision systems at RHIC provide important insights into the energy density and path length dependencies of parton energy loss. In this poster, we will report the measurement of h+jet yields for the charged-particle jets with radii ranging from 0.2 to 0.5 in isobar collisions at $\sqrt{s_{NN}} = 200$ GeV. The anti- k_T jet reconstruction algorithm is used, with mixed-event technique applied to remove uncorrelated combinatorial background present in heavy-ion collisions. The trigger hadrons are selected with p_T between 7 and 25 GeV/ c . Results of fully corrected per-trigger jet yield integrated over a recoil region and its relative suppression in central to peripheral collisions at mid-rapidity as a function of jet p_T will be presented.

Category

Experiment

Collaboration (if applicable)

the STAR Collaboration

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