Contribution ID: **251** Type: **Poster**

Phenomenological study of transverse momentum balance of dijets in Xe+Xe collisions at $\sqrt{s_{\rm NN}} = 5.44$ TeV

We present a theoretical study of the medium modifications of the $p_{\rm T}$ balance ($x_{\rm J}$) of dijets in Xe+Xe collisions at $\sqrt{s_{\rm NN}} = 5.44$ TeV. The initial production of dijets is carried out by the POWHEG+PYTHIA8 prescription, which matches the next-to-leading order (NLO) QCD matrix elements with the parton shower (PS) effect. The in-medium evolution in nucleus-nucleus collisions is described by the SHELL model with a transport approach. The theoretical results of the dijet $x_{\rm J}$ in Xe+Xe collisions exhibit more imbalanced distributions than that in p+p, consistent with the recently reported ATLAS data. By utilizing the Interleaved Flavor Neutralisation, an infrared-and-collinear-safe jet flavor algorithm, to identify the flavor of the reconstructed jets, we classify dijets processes into three categories: gluon-gluon (gg), quark-gluon (qg) and quark-quark (qq), and investigate the respective medium modification patterns and fraction changes of the gg, qg, and qq components of the dijet sample in Xe+Xe collisions. By comparing the $\Delta\langle x_{\rm J}\rangle = \langle x_{\rm J}\rangle_{\rm pp} - \langle x_{\rm J}\rangle_{\rm AA}$ of inclusive, $c\bar{c}$ and $b\bar{b}$ dijets in Xe+Xe collisions, we observe $\Delta\langle x_{\rm J}\rangle_{\rm incl.} > \Delta\langle x_{\rm J}\rangle_{\rm cc} > \Delta\langle x_{\rm J}\rangle_{\rm bb}$.

Category

Theory

Collaboration

Authors: ZHANG, Ben-Wei (Central China Normal University); WANG, Sa (South China Normal University); SHEN, Shuwan (Central China Normal Univercity); LI, Yao

Presenter: LI, Yao

Track Classification: 1. Jets modification and medium response