



## Impacts of heavy-flavor probes in small colliding systems

Tuesday 14 June 2022 17:13 (1 minute)

Although signatures of collectivity in high-multiplicity pA collisions suggest possible final-state interactions, an unambiguous search of jet quenching in small collision systems is still missing. Using quark mass as another handle, heavy-flavor observables can shed light on different mechanisms of jet modification in  $p$ -Pb,  $d$ -Au, and O-O collisions. We employ a coupled DGLAP evolution framework that takes advantage of the medium-modified QCD splitting functions recently obtained in SCET<sub>G</sub> and incorporates HTL-motivated collisional energy loss effects and initial-state parton modification in the cold nuclear matter. With the jet-medium couplings constrained to the nuclear modification factor of charged hadrons  $R_{AA}^{h\pm}$  in Pb-Pb collisions, we predict  $D$ - and  $B$ -meson  $R_{AA}$  in Xe-Xe, O-O, and p-Pb collisions at the LHC and  $d$ -Au collisions at RHIC. We find suppression that scales non-trivially with the quark mass and medium sizes. We further analyzed the impact of the initial-state cold nuclear matter effects on the search for QGP signatures in small colliding systems.

### Present via

Online

**Authors:** VITEV, Ivan; KE, Weiyao (Los Alamos National Laboratory)

**Presenter:** KE, Weiyao (Los Alamos National Laboratory)

**Session Classification:** Poster

**Track Classification:** Heavy-flavor and Quarkonia