
Beitrag ID: **222** Typ: **Talk**

# Pushing forward jet substructure measurements in heavy-ion collisions

*Mittwoch, 29. März 2023 11:10 (20 Minuten)*

In this talk, we introduce a novel approach to minimise selection biases associated to the modification of the quark- vs. gluon-initiated jet fraction in order to assess the presence of other medium-induced effects, namely color decoherence. More concretely, we propose to explore the rapidity dependence of jet substructure observables. So far, all jet substructure measurements at mid-rapidity have shown that heavy-ion jets are narrower than vacuum jets. First, we show analytically that if the narrowing effect persists at forward rapidities, where the quark-initiated jet fraction is greatly increased, this could serve as an unambiguous experimental observation of color decoherence dynamics in heavy-ion collisions. Next, we carry out Monte Carlo simulations using the expected statistics of the projected high-luminosity runs and demonstrate that this measurement is within reach of the future detector capabilities that will allow for an extended rapidity coverage both at LHC and RHIC, with STAR.

Based on: *Pushing forward jet substructure measurements in heavy-ion collisions*, D. Pablos, A. Soto-Ontoso. *arXiv:2210.07901*

## Experiment/Theory

Theory/Phenomenology

## Affiliation

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**Sitzung Einordnung:** Parallel: Jets and their modification in QCD Matter

**Track Klassifizierung:** Jets and their modification in QCD matter