

DPF-PHENO 2024

Contribution ID: 645

Type: **not specified**

Detectorology and its Phenomenological Applications

Wednesday 15 May 2024 14:00 (15 minutes)

Energy correlators, which as a jet-substructure observable measure correlations between energy detectors (calorimeters) in a collider experiment, have received significant attention over the last few years in both the theory/phenomenology and experimental communities. This success has prompted investigations into how energy correlators can be further used, such as in the study of both hot and cold nuclear matter, as well as to gain access to particles with particular quantum numbers. This requires “building” new detectors which are sensitive to more than just particle energy. In this talk, we will discuss this larger space of detectors, including some specific examples such as detectors which are sensitive to arbitrary powers of energy, as well as ones that are sensitive to a global $U(1)$ charge. Beyond their construction, we will also discuss the renormalization of these objects and also highlight some ongoing experimental efforts which utilize these observables.

Mini Symposia (Invited Talks Only)

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Session Classification: QCD & Heavy Ion Physics

Track Classification: QCD & Heavy Ion Physics