

Conformal Colliders Meet the LHC*

Wednesday 1 June 2022 10:00 (1 hour)

Jets of hadrons produced at high-energy colliders provide experimental access to the dynamics of asymptotically free quarks and gluons and their confinement into hadrons. Motivated by recent developments in conformal field theory, we show that questions of interest in collider physics can be reformulated as the study of correlation functions of a specific class of light-ray operators and their associated operator product expansion (OPE). We show that multi-point correlation functions of these operators can be measured in real LHC data, allowing us to experimentally verify both the scaling properties associated with the OPE, and the celestial block decomposition of higher point correlators.

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