Contribution ID: **50** Type: **Presentation**

Weighing the Top with Energy Correlators

Thursday 18 August 2022 14:40 (15 minutes)

Final states in collider experiments are characterized by correlation functions of the energy flow operator - which plays the roll of an idealised calorimeter. In this talk, I will show that the boosted top quark imprints itself as a peak in the three-point correlator at an angle determined by its mass and transverse momentum. This provides direct access to one of the most important parameters of the Standard Model in one of the simplest field theoretical observables.
The analysis I will present provides a new paradigm for a precise top mass determination that is, for the first time, highly insensitive to soft physics and underlying event contamination.

Authors: Dr HOLGUIN, Jack (CPHT, Ecole Polytechnique); PROCURA, Massimiliano (University of Vienna (AT)); PATHAK, Aditya (University of Manchester); MOULT, Ian (Yale University)

Presenter: Dr HOLGUIN, Jack (CPHT, Ecole Polytechnique)

Session Classification: Top/EW/QCD