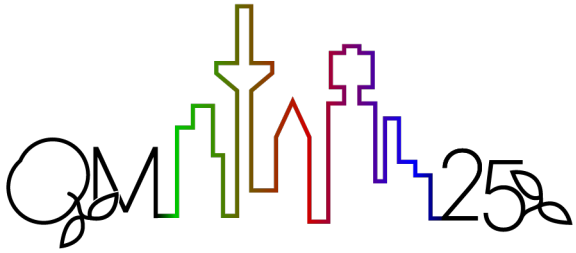

Contribution ID: **772** Type: **Poster**

New angles on energy correlators

Energy correlators have come to the forefront for studying high energy particle collisions. Their natural separation of physical effects at different scales have made them very attractive for studying a wide range of phenomena in high energy particle physics. E.g. the most precise measurement of the strong coupling from jet substructure has been obtained using energy correlators. Recently, we introduced a new parameterization that features a simpler phase space and preserves the information on orientation of the particles. Concretely, our new parameterization reduces the computational cost of computing an N-point correlator on a jet with M particles to M^2 log(M), independent of the value of N. This computational speed up would be very beneficial in aiding the ongoing studies of energy correlators in the medium where M is typically very large. Finally, I will also introduce resolved N-point energy correlators that encode angular correlations between greater number of particles and demonstrate the superior visualization our approach offers in this regard.

Category

Theory

Collaboration (if applicable)

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Session Classification: Poster session 1

Track Classification: Jets