

Contribution ID: 48

Type: **not specified**

Disentangling QGP response using energy flow correlators

Wednesday 8 February 2023 15:30 (15 minutes)

The study of the Quark-Gluon Plasma, the deconfined phase of QCD matter, is a very active and fast-developing field of research. The QGP is the phase matter of the Universe in its first microsecond of existence and can be formed in collisions of ultra-relativistic Heavy Ions. One of the key ways the internal properties of QGP have been studied is by looking at how it affects the behavior of jets, collimated sprays of hadrons, produced in heavy-ion collisions, given that these jets travel through the QGP and their properties are modified in comparison to their vacuum counterpart (proton-proton collisions). A further contribution to what experimentalists reconstruct as the final jet arises from the QGP response to the jet passage through it, as a result of extra hadrons, created as the plasma freezes out, being dragged in the jet's direction.

This work aims to disentangle the response of the QGP from jets in heavy-ion collisions using energy flow correlators, as at present time a reliable method is yet to be found. By computing and analysing energy flow correlators, which are expected to contain every possible information about jets, using simulated data, one will hopefully be able to identify signatures that are specific to the QGP response and separate both contributions.

Author: COELHO LEITÃO, Marco António

Presenter: COELHO LEITÃO, Marco António