



Contribution ID: 88

Type: **not specified**

## Jet mass measurements in Pb–Pb and pPb collisions with ALICE at the LHC

*Saturday, 24 September 2016 10:40 (20 minutes)*

The properties of the quark-gluon plasma (QGP) produced in high-energy heavy-ion collisions can be studied using high-momentum partons originating from the early stage of the collision. Their interaction with the medium provides information on the QGP properties.

High-momentum partons shower and hadronise into jets and the energy and mass of the jets are correlated to the energy and off-shellness (virtuality) of the original partons. The jet measurements hence allow us direct access to the virtuality evolution of the parton as a function of the jet energy. While propagating through the medium, the leading parton loses energy, leading to a suppression to the jet- $p_T$  spectrum, and virtuality.

The first measurements of the jet mass in Pb–Pb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV and pPb collisions at  $\sqrt{s} = 5.02$  TeV at the LHC, performed with the ALICE experiment, are reported in the  $p_{T,jet}$  region from 60 to 120 GeV/c. Jets were reconstructed using charged tracks with  $p_T > 0.150$  GeV/c, clustered with the anti- $k_T$  algorithm, and fully corrected for background and detector effects. The Pb-Pb measurement is compared with the results from p-Pb collisions, with PYTHIA, and with models that implement different types of interactions with the medium that produce either a depletion or an increase of the jet mass.

These jet mass measurements add a new dimension to jet quenching studies, by constraining both of the relevant quantities, energy and virtuality, and will further provide non-trivial tests for models of in-medium shower evolution.

### Summary

### Presentation type

Oral

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**Session Classification:** Parallel Session II: Jet Modification in A+A (II)