



Beitrag ID: 35

Typ: Talk

## Measurement of the $R$ dependence of jet quenching in pp and Pb-Pb collisions with ALICE

*Dienstag, 28. März 2023 09:00 (20 Minuten)*

Jets are excellent probes for studying the deconfined matter formed in heavy ion collisions. Measurements of jet yield and substructure as a function of jet resolution parameter  $R$  over a wide range in jet  $p_T$  probe the mechanisms underlying the interaction between jets and the QGP, notably the role of opening angle of the hardest jet shower components, and of the angular distribution of medium-induced radiation. In this talk, we will present two measurements of the nuclear modification factor  $R_{AA}$  in central Pb-Pb collisions at  $\sqrt{s} = 5.02$  TeV with ALICE, addressing the influence of the large uncorrelated background with novel techniques in machine learning and mixed event subtraction. The mixed-event technique, newly introduced in ALICE, enables inclusive jet measurements at low  $p_T$  with minimal bias, in a previously unexplored energy regime at the LHC. In addition, the machine learning method enables the measurement of the  $R$ -dependence of jet suppression for  $R = 0.6$  down to 40 GeV/c. Finally, we introduce a new infrared and collinear safe measurement of the jet energy flow within jets reconstructed with different resolution parameters  $R$ . Investigating how the energy is distributed for the same jet with different  $R$  allows energy loss to be explored on a jet-by-jet basis instead of between different populations of jets as in inclusive measurements. These results are compared to jet quenching models.

### Experiment/Theory

ALICE

### Affiliation

CERN

**Hauptautor:** PLIATSKAS, Christos

**Vortragende(r):** PLIATSKAS, Christos

**Sitzung Einordnung:** Parallel: Jets and their modification in QCD Matter

**Track Klassifizierung:** Jets and their modification in QCD matter