

# 10th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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## Studies of quark-like and gluon-like contributions to jets using jet charge measurements in pp and PbPb collisions with the CMS experiment

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Jets can be used to study in-medium modifications of the parton shower and the energy loss mechanisms in heavy-ion collisions. Several recent works have alluded to a modification in the fractions of quark and gluon jets in QGP due to color-charge dependent quenching. The jet charge is defined as the momentum-weighted sum of charges of particles inside a jet. The sensitivity of jet charge to the electric charge of the initiating parton can be used to discriminate between jets of different origins. In this talk, the unfolded jet charge distributions are presented using data with pp and PbPb collisions at 5.02 TeV collected by the CMS experiment. A template-fitting method is presented to extract the quark-like and gluon-like jet fractions in pp and PbPb collisions using templates from simulations. We also present a jet charge based tagging technique to decompose the inclusive jet shape measurements into the respective quark-like and gluon-like jet shape distributions. These results provide crucial input towards a better understanding of the flavor-dependent medium modifications of the parton shower.

### Collaboration (if applicable)

CMS

### Track

Jets and High Momentum Hadrons

### Contribution type

Contributed Talk

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