



Contribution ID: 273

Type: Oral presentation

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

Wednesday, 6 April 2022 16:00 (20 minutes)

Jets have become a prominent tool for studying properties of the quark-gluon plasma through observations of in-medium modifications of parton showers and energy loss patterns in heavy-ion collisions. These effects, termed jet quenching, were expected to depend on the color-charge and/or flavor of the parton initiating the shower. The jet charge observable, defined as the momentum-weighted sum of in-jet particle charges, is sensitive to the electric charge of the original parton and can be used to discriminate between gluon-initiated and quark-initiated jets in proton-proton collisions. In this talk, the first measurements of jet charge distributions from 5 TeV PbPb collisions compared with matching energy pp data and predictions from leading and next-to-leading-order generators. The measurements performed with the CMS experiment show no significant modification to the components of the jet charge distribution between pp and PbPb collisions.

**Primary author:** CMS

**Presenter:** EVDOKIMOV, Olga (University of Illinois at Chicago (US))

**Session Classification:** Parallel Session T04: Jets, high-pT hadrons, and medium response

**Track Classification:** Jets, high-pT hadrons, and medium response