

Quark Matter 2019 - the XXVIIIth International Conference on Ultra-relativistic Nucleus-Nucleus Collisions



Contribution ID: 508

Type: Oral Presentation

Studies of quark and gluon contributions to jet production using jet charge measurements in pp and PbPb collisions with the CMS detector

Wednesday, 6 November 2019 08:40 (20 minutes)

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 at LHC have hinted that quark and gluon fractions in measured jets may be modified in QGP due to quenching. Jet charge is defined as the momentum-weighted sum of charges of particles inside a jet. It is sensitive to the charge of the initiating parton and can be used to discriminate between gluon-initiated and quark-initiated jets. In this talk, jet charge distributions, unfolded for detector and background effects, are presented using data with pp and PbPb collisions in different centrality classes at $\sqrt{s_{NN}} = 5.02 TeV$ collected by the CMS experiment. The pp results are compared to predictions from leading and next-to-leading-order generators. We also present a template fitting technique for estimating the quark and gluon jet fractions in pp and PbPb collisions based on Monte Carlo templates.

Primary author: HANGAL FOR THE CMS COLLABORATION, Dhanush Anil (University of Illinois at Chicago (US))

Presenter: HANGAL FOR THE CMS COLLABORATION, Dhanush Anil (University of Illinois at Chicago (US))

Session Classification: Parallel Session - Jet modifications II

Track Classification: Jet modifications and medium response