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Jet charge in pp collisions with ALICE

Jet charge is the momentum weighted sum of the electrical charges of jet constituents. This value is sensitive to the charge of the parton that initiates the jet. However, jet charge distributions depend strongly on the choice of parameters for the jet, namely, jet radius, minimum $p_{T,jet}$. This poster presents the measurement of jet charge for proton-proton collisions at $\sqrt{s_{NN}} = 5.02$ GeV. Based on Monte Carlo data generated by PYTHIA8, templates are constructed representing the jet charge distribution at the detector level for different flavours of jet. These templates are generated for various jet radii and momenta. The differences between detector and generator level templates are also presented. In addition, an examination of the systematic uncertainties introduced by using this approach is reported. These studies identify the optimal parameter space for jet charge measurements with the ALICE detector to provide maximum discrimination of jet flavours.

Collaboration / Activity

ALICE

First author

Email

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