Contribution ID: **61** Type: **not specified**

Performance of heavy flavour jet identification in boosted topologies in CMS 13 TeV data

Monday 6 November 2023 11:45 (15 minutes)

Physics measurements in the highly Lorentz-boosted regime, including the search for the Higgs boson or beyond standard model particles, are a critical part of the LHC physics program. In the CMS Collaboration, various boosted-jet tagging algorithms, designed to identify hadronic jets originating from a massive particle decaying to $b\bar{b}$ or $c\bar{c}$, have been developed and deployed in a variety of analyses. This talk highlights their performance on simulated events, and summarises the novel calibration methods of these algorithms with 2016-2018 data collected in proton-proton collisions at $\sqrt{s}$ = 13 TeV. Three distinct control regions are studied, selected via machine learning techniques or the presence of reconstructed muons from $g \rightarrow b\bar{b}$ ($c\bar{c}$) decays, as well as regions selected from Z boson decays. The calibration results, derived through a combination of measurements in these three regions, are presented.

Primary authors: MARCHEGIANI, Matteo (ETH Zurich (CH)); MARCHEGIANI, Matteo (ETHZ - ETH Zurich); MARCHEGIANI, Matteo

Presenter: MARCHEGIANI, Matteo (ETH Zurich (CH))

Session Classification: Tagging Techniques