

Run 3 performance and advances in heavy flavor jet tagging in CMS

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Identification of hadronic jets originating from heavy-flavor quarks is extremely important to several physics analyses in High Energy Physics, such as studies of the properties of the top quark and the Higgs boson, and searches for new physics. Recent algorithms used in the CMS experiment were developed using state-of-the-art machine-learning techniques to distinguish jets emerging from the decay of heavy flavour (charm and bottom) quarks from those arising from light-flavor (udsg) ones. Increasingly complex deep neural network architectures, such as graphs and transformers, have helped achieve unprecedented accuracies in jet tagging. New advances in tagging algorithms, along with new calibration methods using flavour-enriched selections of proton-proton collision events, allow us to estimate flavour tagging performances with the CMS detector during early Run 3 of the LHC.

Alternate track

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Yes

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