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【368】 Tuning the simulated response of the CMS detector to b-jets using Machine learning algorithms.

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Hadronic jets coming from the fragmentation of b-quarks are crucial tools for a number of physics channels at the CERN LHC, ranging from the Higgs physics to searches for physics beyond the Standard Model. We present a technique that allows tuning the simulated response of the CMS detector at the LHC to b-jets. Machine learning algorithms and likelihood fits are used to obtain finely-grained correction factors, based on samples of b-jets from $t\bar{t}$ decays. Specifically, we employ multivariate classifiers and non-linear multi-dimensional quantile regression models to tune the detector response to b-jets with different properties and compositions.

Primary author: GEDIA, Krunal Bipin (ETH Zurich (CH))

Presenter: GEDIA, Krunal Bipin (ETH Zurich (CH))

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