

Tagging top quarks in variable-sized jets in the CMS experiment

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Identifying boosted hadronic top quarks is a major challenge in the CMS physics program, both in Standard Model measurements and searches for new phenomena. Many excellent tools are available to identify wide-angle jets with top quark flavor. However, the intermediate regime between resolved and highly boosted jets is poorly covered. In recent years, CMS has introduced HOTVR, a variable distance parameter jet clustering algorithm that can be used for top quark production at intermediate boosts. So far top identification on HOTVR was done in a cut-based approach with jet substructure variables. In this poster, the development and performance of a BDT for top quark tagging on HOTVR jets is showcased on data and simulation from the data-taking periods 2016-2018 and 2022 with the CMS experiment.

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