

# Boosted jet physics in CMS

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Many measurements and searches at the Large Hadron Collider need to identify highly boosted particles that decay to hadronic final states. The decay products of these particles will be closely collimated and reconstructed into one single large-radius jet. One can then use jet substructure and deep learning approaches to learn information about the radiation pattern inside the jet and mitigate combinatorial backgrounds. For example, graph neural networks can be trained to take the unordered set of jet constituent particles as inputs and infer attributes of the jet. These jet tagging methods are then calibrated to reflect their tagging efficiency in data and the uncertainties on the calibration will vary depending on the complexity of the final state. In this talk, I will review the latest jet tagging techniques in CMS, their calibration methods and its usage in searches for boosted heavy resonances with 13 TeV LHC data.

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