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Boosted hadronically decaying tops in new physics searches

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Top momentum reconstruction often plays an important role for new physics signal reconstruction at the LHC. In principle for a hadronically decaying top, it is possible to reconstruct its momentum fully but one suffers from large QCD and combinatorial backgrounds.
Starting from geometrically large sizes of jets and looking into their substructure, we can efficiently reduce these background. We develop HEPTopTagger by adopting a combination of the Cambridge/Aachen algorithm and the mass drop criterion. As application for physics cases, we illustrate the scalar top reconstruction and the top forward-backward asymmetry.

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