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Boosted tops as a window to new physics

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Abstract:

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

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