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## New Multivariate Approach to Tagging Highly Boosted Top Quarks, Higgs Bosons, and W and Z Bosons

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We present a new approach for efficiently and selectively identifying high-momentum, hadronically decaying top quarks, Higgs bosons, and W and Z bosons, distinguishing them from jets from light quarks and gluons in proton-proton collisions at the LHC or future colliders. This technique yields variables that can be combined with those from current approaches to boosted particle tagging in multivariate classifiers such as deep neural networks or boosted decision trees to yield estimators which can be used in a broad range of analyses in which such highly boosted particles play a role. The technique is capable of identifying subjects which overlap strongly in the tracking and calorimetry systems, allowing good performance even in the multi-TeV regime. The performance of the method is studied in various scenarios and shows promise for actual use at the LHC experiments.

### Summary

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