

Boosted Jets; identifying highly boosted W, Z, top, Higgs and more

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As we probe higher energy scales of potential new physics the boost of Standard Model particles can be extremely high. When these decay hadronically their decay products are boosted and therefore collimated such that they can be reconstructed as single large-radius jets with distinctive internal structure. The process of calibrating these jets will be described. Additionally innovative techniques, including the use of machine learning, have been developed to identify such objects. These will be described as well as how their performance is evaluated in data. How these techniques are then used in searches for Supersymmetry and other new physics models will also be demonstrated.

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