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Boosted H>bb Tagger in Run II

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Several searches for Higgs bosons decaying to bquark pairs benefit from the increased Run II centreofmass energy by exploiting the large transversmomentum (boosted) Higgs boson regime, where the two bjets are merged into one largeradius jet. ATLAS uses a boosted H>bb tagger algorithm to separate the Higgs signal from the background processes (QCD, W and Z bosons, top quarks). The tagger takes as input a largeR=1.0 jet calibrating the pseudorapidity, energy and mass scale. The tagger employs btagging, Higgs candidate mass, and substructure information. The performance of several operating points in Higgs boson signal and QCD and ttbar allhadronic backgrounds are presented. Systematic uncertainties are evaluated so that this tagger can be used in analyses. Analyses that employ the tagger, such as the search for a resonance decaying to a vector boson and a Higgs boson (X>VH), are also presented.

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