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BDTs in the Search for $t\bar{t}H$ Production with Higgs Decays to $b\bar{b}$ at ATLAS

The observation of Higgs boson production in association with a top quark pair allows the direct measurement of the top quark Yukawa coupling, a vital test to validate the Higgs mechanism within the Standard Model. The ATLAS search for this process relies on Boosted Decision Trees for Higgs reconstruction and signal-background discrimination. The employment of BDTs in the analysis of $\sqrt{s} = 13$ TeV proton-proton collisions, collected with the ATLAS detector at the CERN LHC in 2015 and 2016, is presented. Higgs boson decays to two bottom quarks, and top pair decays with one or two leptons are considered.

Experimental Collaboration

ATLAS

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