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Type: LHC experiments

Search for $t\bar{t}H$ production in high- p_T regimes with the ATLAS detector

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The associated production of the Higgs boson with a pair of top/anti-top quarks ($t\bar{t}H$) is the only process providing the direct access to the measurement of the Yukawa coupling between the Higgs boson and the top quark. The presented results exploit the data collected during 2015 and 2016 by the ATLAS experiment during LHC collisions at a center-of-mass energy of 13 TeV. Multivariate analysis techniques are used in order to discriminate the signal from the very large backgrounds arising mainly from top-quark pair production. In addition, the analysis uses for the first time algorithms specifically designed to cope with the challenging reconstruction of hadronically decaying high- p_T bosons and top quarks.

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