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Search for the Standard Model Higgs boson produced in association with top quarks and decaying to bb in pp collisions at $\sqrt{s}$ = 7 TeV with the ATLAS detector at the LHC.

A search for a Higgs boson produced in association with a pair of top quarks (ttH) and decaying into a pair of bottom quarks (H⟶bb) is presented. The search is focused on the semileptonic decay of the tt system and exploits different topologies given by the jet and b-tagged jet multiplicities of the event. A kinematic reconstruction of the ttH topology is performed in the signal enhanced region, which becomes the primary discriminant variable between signal and background. Using 4.7/fb of data collected with the ATLAS detector during Run 1 of the Large Hadron Collider, we obtain an observed (expected) 95% confidence-level upper limit of 13.1 (10.5) times the Standard Model cross section for a Higgs boson with a mass of 125 GeV.

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