



**HEP 2013
Stockholm
18-24 July 2013**



Contribution ID: 777

Type: **Poster Presentation**

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 ($t\bar{t}H$) and decaying into a pair of bottom quarks ($H \rightarrow b\bar{b}$) is presented. The search is focused on the semileptonic decay of the $t\bar{t}$ system and exploits different topologies given by the jet and b-tagged jet multiplicities of the event. A kinematic reconstruction of the $t\bar{t}H$ 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.

Presenter: SERKIN, Leonid (Georg-August-Universitaet Goettingen (DE))

Track Classification: Higgs and New Physics