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Search for new resonances coupling to third generation quarks in pp collisions at 13 TeV at ATLAS (15' + 5')

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A search for new resonances that decay into top quark pairs and new resonances that decay into a top quark and a b quark are reported. The search is performed with the ATLAS experiment at the LHC using proton-proton collision data collected at a centre-of-mass energy of $\sqrt{s} = 13$ TeV. Both the lepton plus jets channel in the top pair search and the all hadronic channel are explored in both searches. In the top pair search, the invariant mass spectrum of top quark pairs is examined for local excesses or deficits that are inconsistent with the Standard Model prediction. In the top-bottom search, the invariant mass spectrum of the tb final state is reconstructed and compared to the Standard Model prediction.

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