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Nota di contenuto	Introduction and Theoretical Framework -- The ATLAS Experiment at the Large Hadron Collider -- Event Simulation -- Event Reconstruction -- Event Samples and Preselection -- Analysis Strategy -- Systematic Uncertainties -- Statistical Analysis -- Results -- Prospects -- Summary.
Sommario/riassunto	This PhD thesis focuses on the search for flavor-changing neutral currents in the decay of a top quark to an up-type quark (q = u, c) and the Standard Model Higgs boson, where the Higgs boson decays to bb. Further, the thesis presents the combination of this search for top quark pair events with other ATLAS searches – in the course of which the most restrictive bounds to date on tqH interactions were obtained. Following on from the discovery of the Higgs boson, it is particularly important to measure the Yukawa couplings of the Standard Model fermions; these parameters may provide crucial insights to help solve the flavor puzzle and may help reveal the presence of new physics before it is directly observed in experiments.