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Searches for vector-like quarks, tt and tb resonances with the ATLAS detector (joint with the TOP group)

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Various extensions of the Standard Model predict the existence of new types of quarks. We report on several search channels such as vector-like quarks decaying to a Higgs boson and a top quark or to a W boson and a b quark. The talk presents results from searches for new resonances decaying to a top-antitop pair and a top-antibottom pair, including the use of boosted top quark reconstruction techniques. These searches use the data sample recorded in 2012 at sqrt(s)=8 TeV centre-of-mass energy by the ATLAS experiment at the LHC.

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