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4th generation searches at ATLAS

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Top-quark precision measurements are of central importance to the LHC physics program. The top-quark is the heaviest known fundamental particle with unique properties within the Standard Model (SM). Its large couplings to the Higgs boson, and being the only quark that decays before hadronisation make it sensitive to new physics beyond the SM. Among the places to look for deviations from the SM are new quarks families that can appear as a fourth family with Higgs, a "strong"fourth family without Higgs or vector-like quarks. A potential extension for the SM would be the adjonction a 4th family of heavy chiral fermions that could provide new sources of CP violation to explain the matter-antimatter asymmetry in the Universe, and allow for a heavier Higgs boson while remaining consistent with other precision electroweak studies. This poster will review various searches for 4th generation quarks performed using data collected in 7 TeV LHC proton-proton collisions with the ATLAS detector.

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