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Search for pair production of a new b' quark that decays to a Z boson and a bottom quark with the ATLAS detector at the LHC ANDRE BACH, MARK COOKE, MARJORIE SHAPIRO, Lawrence Berkeley National Laboratory, ATLAS COLLABORATION — We report a search for a new down-type quark, denoted b', that is pair produced in pp collisions at $\sqrt{s} = 7$ TeV with at least one b' decaying to a Z boson and a bottom quark. This search complements recent searches for a b' in the W boson plus top quark mode, and is particularly relevant for vector-like quark models. The data comprise 2.0 fb^{-1} of integrated luminosity collected by the ATLAS detector at the LHC in 2011. From events containing both a Z boson reconstructed from electrons, and a b-tagged jet, we enrich any potential signal by selecting a subsample with large b' candidate p_T. We present limits on the mass of the b'.

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