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Searches for W' and b' at the Tevatron

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We present two Tevatron search results for massive particles; the search for a massive quark (b') decaying to t quark and W boson and the search for the production of a massive W' gauge boson that decays into a t and b quark. In the former, we use the scalar sum of the transverse energies and the number of jets present in the event to discriminate possible new quarks or other particles from Standard Model processes, and set limits on a standard 4th generation b' quark. In the latter, we analyze the final-state invariant mass distribution and set upper limits on the production cross section times branching fraction. We set lower mass limits for a left-handed W' boson with SM couplings and for right-handed W' bosons decaying to both leptons and quarks and decaying only to quarks. We also set limits on the coupling of the W' boson to fermions as a function of its mass.

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