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A search for an excited bottom quark decaying to a top quark and W boson in pp collisions at $\sqrt{s} = 13$ TeV LUCAS CORCODILOS, Johns Hopkins Univ, CMS COLLABORATION — A search is performed for the production of an excited b quark, b*, decaying to a top quark and a W boson in all-hadronic final states. The data analyzed was recorded with the CMS detector at the LHC in proton-proton collisions at $\sqrt{s} = 13$ TeV. Since this search covers b* masses in excess of 1 TeV, the hadronic decay products are expected to have high momentum and will thus merge producing a single hadronic jet for each the top and W. This search uses jet substructure algorithms to distinguish the top quark and W boson jets from standard model QCD background. The remaining QCD background is estimated using a data driven technique that interpolates background behavior from events with an enhanced QCD multijet component and small signal contamination.

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