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Constraints on a b-philic Quark and Z' from LHC Results DYLAN GILBERT, DAVID TUCKER-SMITH, Williams College — Final states rich in bottom jets are predicted by a variety of extensions to the Standard Model. A model introducing a new heavy quark Q, charged under a Z' boson and mixing with down-type Standard Model quarks, can lead to an excess of high b-jet multiplicity final states at the LHC, with both Q and the Z' decaying preferentially to bottoms. We estimate the constraints placed on this model's parameter space by LHC results.

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