



Contribution ID: 120

Type: Talk

## **【410】 Search for a single produced vector-like quark B decaying to a b quark and a Higgs boson in a full hadronic final state using boosted topologies**

*Friday 25 August 2017 13:30 (15 minutes)*

A search is presented for single production of a heavy vector-like quark (VLQ) B in its full-hadronic decay channel:  $B \rightarrow bH(\bar{b}b)$ . Higgs-tagging methods and jet substructure techniques are employed to identify decay products of boosted Higgs boson and to discriminate signal-like events against multijet background. Signal sensitivity is also enhanced by the identification of forward jets, as their presence is a peculiar feature of VLQs single production signature. The search is performed using proton-proton collision data at  $\sqrt{s} = 13$  TeV, collected by the CMS experiment at the Large Hadron Collider in 2016 and corresponding to an integrated luminosity of  $35.9 \text{ fb}^{-1}$ .

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**Session Classification:** Nuclear, Particle-and Astrophysics (TASK-FAKT)

**Track Classification:** Nuclear, Particle- and Astrophysics (TASK - FAKT)