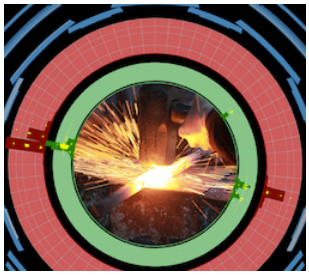

Contribution ID: **21** Type: **parallel talk**

Probing $H^{\pm}$ with the μ_x boosted bottom-jet tag

Tuesday 10 May 2016 15:30 (15 minutes)

We present the discovery potential for a TeV-scale $H^{\pm}$ though its decays to boosted heavy quarks ($pp \to tH^{\pm} + X \to t(tb) + X$). In the alignment limit of a type-II two Higgs doublet model, searches for $H^{\pm}$ effectively constrain its neutral siblings (H/A). We tag massive $H^{\pm} \to tb$ by pairing a high-efficiency boosted-top tag with our low fake-rate μ_x boosted bottom-jet tag (which rejects high-p_T light jets $\sim$10 times better than prior b-tags). The success of the μ_x tag to suppress QCD background for $H^{\pm}$ events further validates its usefulness in the high-p_T regime (as was already demonstrated in generic W' and leptophobic Z' searches).

Summary

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