

Abstract Submitted  
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**The reach for charged Higgs bosons with boosted bottom and boosted top jets**<sup>1</sup> ZACK SULLIVAN, KEITH PEDERSEN, Illinois Institute of Technology — At moderate values of  $\tan(\beta)$ , a supersymmetric charged Higgs boson  $H^\pm$  is expected to be difficult to find due its small cross section and large backgrounds. Using the new  $\mu_x$  boosted bottom jet tag, and measured boosted top tagging rates from the CERN LHC, we examine the reach for TeV-scale charged Higgs bosons at 14 TeV and 100 TeV colliders in top-Higgs associated production, where the charged Higgs decays to a boosted top and bottom quark pair. We conclude that the cross section for charged Higgs bosons is indeed too small to observe at the LHC in the moderate  $\tan(\beta)$  "wedge region," but it will be possible to probe charged Higgs bosons at nearly all  $\tan(\beta)$  up to 6 TeV at a 100 TeV collider.

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