The reach for charged Higgs bosons with boosted bottom and boosted top jets\textsuperscript{1} ZACK SULLIVAN, KEITH PEDERSEN, Illinois Institute of Technology — At moderate values of tan(β), 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(β) "wedge region," but it will be possible to probe charged Higgs bosons at nearly all tan(β) up to 6 TeV at a 100 TeV collider.

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