

Abstract Submitted  
for the APR13 Meeting of  
The American Physical Society

**Search for  $W'$  bosons through decays to boosted top-jets<sup>1</sup>** ZACK SULLIVAN, DANIEL DUFFTY, Illinois Institute of Technology — We propose an alternate model-independent method to search for  $W'$  bosons at the Large Hadron Collider by looking at dijets where one jet is identified as a boosted top-jet. Performing a detector simulated signal and background study, we demonstrate that the reach in effective coupling  $g'$  is improved over existing analysis methods by a factor of 5 for  $W'$  masses below 1.8 TeV, and extend the reach in mass up to 2.5 TeV in the 8 TeV data sample. In order to reach the maximum sensitivity, we describe a previously unexplored set of backgrounds involving muon tagging of high energy  $b$  jets and standard model backgrounds to top-tag jets that we simulate. We propose a series of data-driven samples that might be used to measure the efficiencies for these new backgrounds in the LHC data.

<sup>1</sup>Work supported by the U.S. Department of Energy, under grant no. DE-SC0008347.

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Date submitted: 11 Jan 2013

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