

Abstract Submitted  
for the 4CF14 Meeting of  
The American Physical Society

**A Higgs Discovery via Exotic Higgs Decays** FELIX KLING, SHU-FANG SU, BARATH COLEPPA, University of Arizona — Models of electroweak symmetry breaking, with an extended Higgs sector, are theoretically well motivated. In this study, we focus on the Two Higgs Doublet Model, with a low energy spectrum containing scalars  $H$ , a pseudoscalar  $A$  and charged scalars  $H^\pm$ . We look at exotic decays of those extra Higgses into a light Higgs and a gauge boson:  $A/H \rightarrow HZ/AZ$  and  $H^\pm \rightarrow HW/AW$ . With detailed collider analyses, we obtain the exclusion bounds as well as the discovery reach at the 14 TeV LHC and interpret these bounds in the context of the Type II Two Higgs Doublet Model.

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Date submitted: 04 Sep 2014

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