Abstract Submitted
for the APR14 Meeting of
The American Physical Society

Search for a heavy higgs bosons that decays to light higgs bosons in the minimally supersymmetric standard model using τ final states STEPHANE COOPERSTEIN, University of Wisconsin Madison, CMS COLLABORATION — A search for the extension of the higgs sector to the two higgs doublet model is presented. Decays of the heavy scalar (H) and pseudo-scalar (A) higgs bosons in their decays $H \to hh \to \tau\tau bb$ and $A \to Zh \to ll\tau\tau$ include the standard model-like higgs in the final state. Background estimations use a data driven approach. A binned maximum likelihood fit to the signal monte carlo using the ditau secondary vertex fit algorithm improves discrimination as compared to previous analyses. This search is performed using a 19.5 fb^{-1} data sample at $\sqrt{s} = 8$ TeV collected by the CMS experiment at the LHC.

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Date submitted: 10 Jan 2014 Electronic form version 1.4