

Abstract Submitted
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Search for MSSM Heavy Higgs Bosons with Decays to 125 GeV Higgs Bosons with τ Final States in CMS LAURA DODD, Univ of Wisconsin, Madison, CMS COLLABORATION¹ — A search for heavy higgs bosons decaying to higgs bosons is presented in the context of the Two Higgs Doublet Model, which can be extended to the Minimal Supersymmetric extension to the Standard Model. Heavy scalar higgs H and pseudo-scalar A decays are examined with the final states $H \rightarrow hh \rightarrow \tau\tau b\bar{b}$ and $A \rightarrow Zh \rightarrow ll\tau\tau$, with $m_h = 125$ GeV and $m_H = 260-350$ GeV and $m_A = 220-350$ GeV. Hadronic τ decays and leptonic τ decays are considered. Limits are computed from mass distributions produced with data-driven background methods and kinematic fitting. The search includes 19.7 fb^{-1} of data taken with the CMS experiment at the LHC with center of mass energy $\sqrt{s} = 8$ TeV.

¹Compact Muon Solenoid

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