

Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Search for the SM Higgs boson using the $H \rightarrow ZZ \rightarrow 2\ell 2\nu$ decay mode at the CMS JAKUB ZABLOCKI, Purdue University, CMS COLLABORATION — A search for the Higgs boson in the high mass regime using the 8 TeV proton-proton collision datasets acquired by the CMS experiment throughout 2012 is presented. The results are obtained from using decay $H \rightarrow ZZ \rightarrow 2\ell 2\nu$ channel. The data driven techniques are used to estimate the background and the systematic uncertainties. We expect to set limits on the Higgs boson production cross section at 95% C.L. With the categorization of events and study of the VBF production this analysis probes the unitarity of the vector boson scattering probability in high mass regime.

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Date submitted: 10 Jan 2013

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