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## Search for a heavy Higgs boson in the $H \rightarrow ZZ \rightarrow 2l2\nu$ channel in pp collisions at $\sqrt{s} = 7$ and 8 TeV at CMS experiment.

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A search for a heavy Higgs boson in the  $H \rightarrow ZZ \rightarrow 2l2\nu$  decay channel, where  $l = e$  or  $\mu$ , in pp collisions at a center-of-mass energy of both 7 and 8 TeV is presented. The search is optimised separately for the vector boson fusion and the gluon fusion production processes. No significant excess is observed above the background expectation. A re-interpretation of the results as a search for an electroweak singlet extension of the Standard Model is also presented.

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