

Search for the standard model Higgs boson produced in association with W or Z bosons, and decaying to bottom quarks

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One of the most important decay channels of the standard model Higgs is its decay into a pair of bottom quarks.

For the highest signal significance, the associated production of the Higgs with a W or Z boson is investigated.

Six different channels are used: $W(\mu\nu)H$, $W(e\nu)H$, $W(\tau\nu)H$, $Z(\mu\mu)H$, $Z(ee)H$ and $Z(\nu\nu)H$. A data sample, recorded by the CMS experiment at $\sqrt{s} = 7\text{TeV}$ and 19fb^{-1} at $\sqrt{s} = 8\text{TeV}$ is analyzed. Exclusion limits at the 95% confidence level and significance of signal $\sigma \times \text{Br}(H \rightarrow b\bar{b})$ in the mass range 110-135 GeV are reported.

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