

Search for Resonant and Non-resonant VHH Production with ATLAS detector

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A search for a vector boson produced in addition to two SM Higgs bosons is studied. Three different models are considered either non-resonant production with SM-like or non-SM-like Higgs self-coupling and $hhVV$ coupling, or resonant production in the form of either $VH(hh)$ or $A \rightarrow ZH(hh)$. Three sub-channel is considered for different decay mode for vector boson to $Zll/Wlv/Z\nu\nu$ final states. Only $HH \rightarrow bbbb$ decay is considered for statistics and high signal efficiency.

Primary author: Mr XU, Zhongyukun (Shandong university)

Presenter: Mr XU, Zhongyukun (Shandong university)

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