



MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

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Search for Higgs boson pair production in the $bbWW$ final state at $\sqrt{s} = 13$ TeV with the ATLAS detector

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This talk presents a search for Higgs boson pair production where one Higgs boson decays via $h \rightarrow bb$ and the other Higgs boson via $h \rightarrow WW^* \rightarrow \ell\nu qq$ (where ℓ is either an electron or a muon). The $bbWW^*$ final state is the second largest di-Higgs branching fraction after $hh \rightarrow bbbb$. This is the first search using the $bb\ell\nu qq$ final state to search for double Higgs production. Data from pp collisions recorded by the ATLAS detector at the LHC were collected at $\sqrt{s} = 13$ TeV and correspond to an integrated luminosity of 36 fb^{-1} . The search is performed looking for non-resonant and resonant di-Higgs production with resonant masses ranging from 500 to 3000 GeV.

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