



MEETING OF THE AMERICAN PHYSICAL SOCIETY DIVISION OF PARTICLES AND FIELDS

Contribution ID: 211

Type: **Presentation**

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

Wednesday, 2 August 2017 13:30 (20 minutes)

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  $\ell$  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  $36 \text{ fb}^{-1}$ . The search is performed looking for non-resonant and resonant di-Higgs production with resonant masses ranging from 500 to 3000 GeV.

**Primary author:** Mr TANNENWALD, Benjamin (Ohio State University)

**Presenter:** Mr TANNENWALD, Benjamin (Ohio State University)

**Session Classification:** Higgs and EWSB

**Track Classification:** Higgs and EWSB