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## Search for CP violating effects in HWW vertex in WH production channel with $H \rightarrow b\bar{b}$ in 13 TeV pp collisions with the ATLAS detector

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The Standard Model (SM) predicts the Higgs boson to be a CP-even (scalar) particle. Any deviation from a purely CP-even interaction of the Higgs boson with other SM particles would indicate physics beyond the SM. This poster presents a search for CP violating effects in Higgs boson production in association with a W boson, using proton-proton collision data collected by the ATLAS detector at the Large Hadron Collider from 2015-2018, corresponding to an integrated luminosity of  $139 \text{ fb}^{-1}$  at a center-of-mass energy of 13 TeV. The analysis focuses on the Higgs boson decay to bottom quark pairs and the W boson decay to leptons:  $WH$ , with  $H \rightarrow b\bar{b}$  and  $W \rightarrow l\nu$  ( $l = e, \mu$ ). Fiducial cross-section measurements are performed using the Simplified Template Cross Section (STXS) formalism in bins of an angular observable and the W boson transverse momentum, providing a sensitive probe to CP-violating components in the  $HWW$  vertex. The results are interpreted within the Standard Model Effective Field Theory, and constraints are set on the relevant Wilson coefficient in the Warsaw basis,  $c_{H\widetilde{W}}$  (CP-odd operator).

### Secondary track

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