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Measurements of the Standard Model Higgs boson in pp collisions at 13 TeV with the ATLAS detector, in its associated production with a W or Z boson and decaying into a pair of b-quarks

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The search for the most dominant decay mode of the Higgs boson, $H \to b\bar{b}$, proved to be an elusive and challenging due to the low signal-to-background ratio, and a diverse range of backgrounds arising from multiple Standard Model processes. The use of the production in association with a W or Z boson, while reducing the overall rate of the process, allowed on the other hand to use topologies with better sensitivity, ultimately leading to the observation of the $H \to b\bar{b}$ process, and the measurement of its cross section in various bins of the transverse momentum of the accompanying vector boson. The poster presents measurements of the WH and ZH production, with the W or Z boson decaying into charged leptons (electrons or muons, including those produced from the leptonic decay of a tau lepton), in the $H \to b\bar{b}$ decay channel in pp collisions at 13 TeV, corresponding to an integrated luminosity of 139 fb^{-1}, with the ATLAS detector are presented.

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