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Associated production of $H(b\bar{b}, c\bar{c})$ with a W or a Z in ATLAS

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Results are presented from the ATLAS search for Standard Model Higgs bosons decaying to a $b\bar{b}$ or $c\bar{c}$ pair, produced in association with a W or Z boson. The analyzed data correspond to 36.1 fb^{-1} of 13 TeV proton-proton collision data collected in Run 2 of the Large Hadron Collider. The combination of Run 1 and Run 2 data in the $b\bar{b}$ channel yields a ratio of the measured production rate to the SM prediction equal to $0.90 \pm 0.18(\text{stat.})_{-0.19}^{+0.21}(\text{syst.})$. The observed significance of 3.6σ provides evidence for the direct $Hb\bar{b}$ Yukawa coupling. A similar search for $c\bar{c}$ decays results in an upper limit on the production cross section times branching ratio.

Summary

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