

Observation of H \rightarrow bb decays and VH production with the ATLAS detector

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A search for the decay of the Standard Model Higgs boson into a bb pair when produced in association with a W or Z boson is performed with the ATLAS detector. The analyzed data, corresponding to an integrated luminosity of 79.8 fb⁻¹, were collected in proton–proton collisions in Run 2 of the Large Hadron Collider at a centre-of-mass energy of 13 TeV. For a Higgs boson mass of 125 GeV, a clear excess of events over the expected background from other Standard Model processes is found. A combination is performed with the results from other searches in Run 1 and in Run 2 for the Higgs boson in the bb decay mode, providing direct observation of the Higgs boson decay into b-quarks. Additionally, a combination of Run 2 results searching for the Higgs boson produced in association with a vector boson provides a direct observation of the Higgs boson being produced in association with a vector boson.

Type

Parallel talk

Sessions (parallel only)

Higgs

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