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Search for an Invisibly Decaying Higgs Boson Produced via Vector Boson Fusion in pp Collisions at s√=8 TeV using the ATLAS Detector at the LHC

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A search for Higgs bosons produced via vector boson fusion and decaying into invisible particles using 20.3 fb−1 of 8 TeV data recorded by the ATLAS detector at the LHC is presented. Data-driven techniques are used to estimate the main Standard Model backgrounds. For a Higgs boson with a mass of 125 GeV and assuming the Standard Model production cross-section, an upper bound of 0.29 is set on the branching fraction of H⟶ invisible at 95% confidence level, where the expected upper limit is 0.35.

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