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Search for Higgs boson production in association with a high-energy photon via vector-boson fusion with decay into bottom quark pairs at $\sqrt{s} = 13$ TeV with the ATLAS detector CAROLYN GEE, Santa Cruz Inst for Part Phys, ATLAS COLLABORATION — A search is presented for the production of the Standard Model Higgs boson in association with a high-energy photon. With a focus on the vector boson fusion process and the dominant Higgs boson decay to b-quark pairs, the search benefits from a large reduction of multijet background compared to more inclusive searches. Results are reported from the analysis of 132 fb^{-1} of pp collision data at $\sqrt{s} = 13$ TeV collected with the ATLAS detector at the Large Hadron Collider. The measured Higgs boson signal yield in this final state signature is 1.3 ± 1.0 times the Standard Model prediction. The observed significance of the Higgs boson signal above the background is 1.3 standard deviations, compared to an expected significance of 1.0 standard deviations.

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