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Search for new physics phenomena using events with missing transverse momentum and a Higgs boson decaying into two photons at $\sqrt{s} = 13$ TeV with the ATLAS experiment

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A search for new physics phenomena is presented using events with missing transverse momentum and a Standard Model Higgs boson decaying into two photons. This search is based on 13 TeV proton-proton collision data collected by the ATLAS detector at the LHC in 2015 and 2016, corresponding to an integrated luminosity of 36.1 fb^{-1} . No significant excess over the Standard Model expectation is observed. Upper limits at 95% confidence level on the production cross section times the branch ratio of the Higgs boson decaying into two photons are set for two Dark Matter models and a heavy scalar boson model. Additionally, the results are interpreted in terms of 90% confidence level limits on the dark matter-nucleon scattering cross section, as well as 95% confidence level limits on visible cross section.

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