

Abstract Submitted
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Search for dark matter in events with a Higgs boson decaying to two photons and missing transverse momentum in pp collisions at $s = 13$ TeV with the ATLAS detector¹ JINFEI WU, YANPING HUANG, XINCHOU LOU, Institute of High Energy Physics, CAS, ATLAS COLLABORATION — A dark matter search in the events with a Higgs boson decaying to two photons and missing transverse momentum is performed. The 139 fb^{-1} of proton-proton collision data collected at the centre-of-mass energy of 13 TeV with the ATLAS detector at the CERN LHC between the years 2015 and 2018 is used in this study. The results are interpreted in a simplified model with a massive vector mediator that emits a Higgs boson and subsequently decays into a pair of dark matter candidates, and in a two-Higgs-doublet model with either a vector or a pseudoscalar mediator to a pair of dark matter candidates. No significant excess beyond the Standard Model is observed.

¹Thanks for ATLAS Collaboration

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