

# Search for dark matter in the channel of Mono-H( $\gamma\gamma$ ) at the ATLAS experiment and truth-level reweighting

*Thursday 5 April 2018 15:00 (15 minutes)*

A search for dark matter in association with a Higgs boson decaying to two photons based on  $36.1 \text{ fb}^{-1}$  data collected with the ATLAS detector at the LHC at the energy of 13 TeV will be presented. No significant excess over the expected background is observed. Upper limits at 95% confidence levels are set for the Standard Model Higgs boson decaying into two photons in association with missing transverse momentum in different benchmark models: a baryonic  $Z'$  model and a two-Higgs-doublet-model with a  $Z'$  boson. A method of truth-level reweighting is applied in this analysis. The acceptances of the samples after kinematic cuts agree well, and the residual difference is treated as an extra systematic uncertainty in the signal yield.

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