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Property measurements of the Higgs boson in the gammagamma final state with the ATLAS detector at the LHC

The discovery of a particle consistent with a Higgs Boson is a great success for the LHC Physics Program. With a dataset more than doubled since the discovery, ATLAS have established the excess of this new particle over background at a significance of 7 standard deviations in the diphoton channel alone. In this poster, we present measurements of the mass, spin, and couplings of the new particle using the full 25/fb Run I dataset. While the rate in the diphoton channel remains 2.3 standard deviations above the predicted value, the ratios of the production modes and the spin conform to SM Higgs expectations. The mass is measured as $126.8 \pm 0.2(\text{stat}) \pm 0.7(\text{syst})$ GeV.

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