New results on Higgs properties

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ABSTRACT

We present the latest ATLAS and CMS measurements of several Higgs properties,
such as signal-strength modifiers for the main production modes, fiducial and
differential cross sections, and the Higgs mass. We have analyzed the 13 TeV
proton-proton LHC collision data recorded in 2016, corresponding to integrated
luminosities up to 36.1 fb^{-1}. Results for the H $\to$ ZZ $\to 4\ell$ ($\ell =$ eμ), H $\to \gamma\gamma$, and
H $\to \tau\tau$ decay channels are presented. In addition, searches for new phenomena
in the H $\to \gamma\gamma + E_{\mathrm{T}}^{\mathrm{miss}}$ and H $\to$ b$\overline{\mathrm{b}} + E_{\mathrm{T}}^{\mathrm{miss}}$ decay channels are presented.

PRESENTED AT

The Fifth Annual Conference
on Large Hadron Collider Physics
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1 Introduction

HERE IS YOUR INTRODUCTION, REPLACE THE TEXT

The program will be devoted to a review of the latest experimental and theoretical results on hadron collider physics and a discussion on the outlook for the coming years. The conference intends to provide a lively discussion between experimenters and theorists on topics such as the Standard Model Physics and Beyond, the Higgs Boson, Supersymmetry and Heavy Ion Physics and planning for the high luminosity upgrades.

2 Observations

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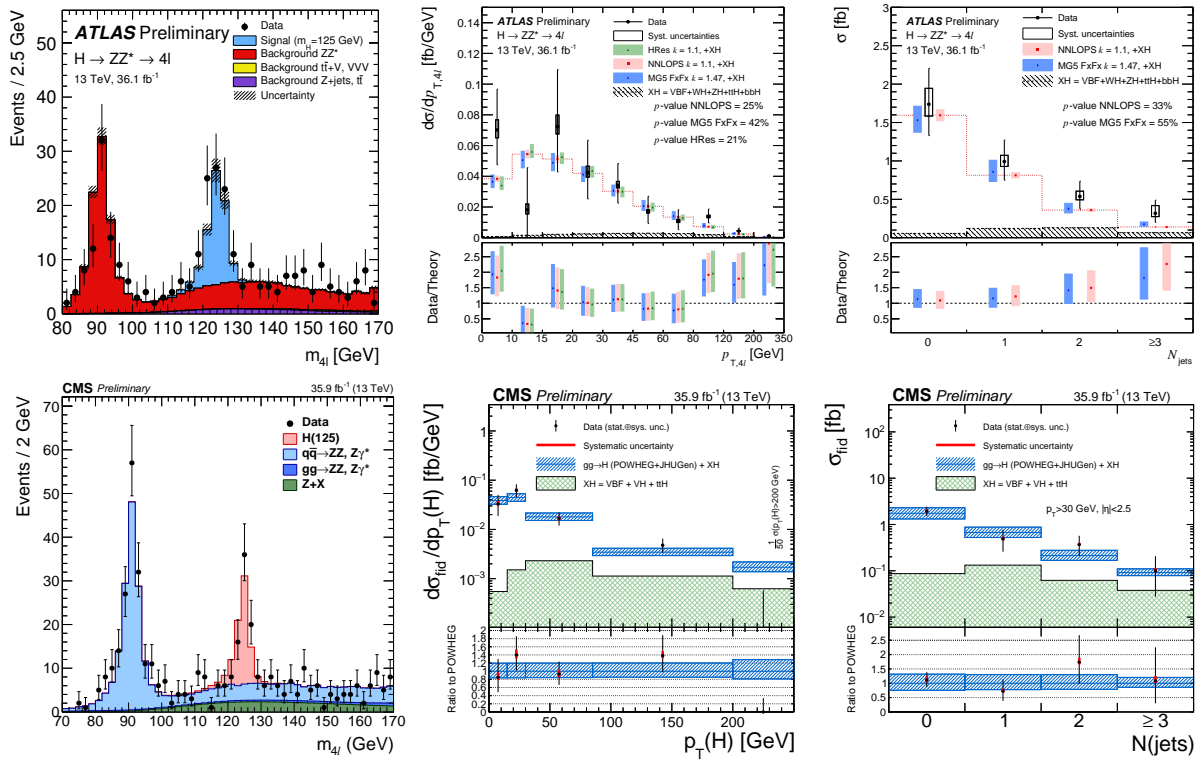
Observation of the Higgs Boson, [1],[2].

Figure 1: (Top left) ATLAS four-lepton invariant mass distribution of the selected events. The error bars on the data points indicate the statistical uncertainty. The systematic uncertainty on the prediction is shown by the dashed band. (Top center and right) ATLAS differential fiducial cross sections, for the transverse momentum of the Higgs boson (center) and the number of jets (right). The measured cross sections are compared to different ggF predictions, and predictions for all other Higgs production modes XH are added. (Bottom left) CMS four-lepton invariant mass distribution of the selected events. (Bottom center and right) CMS differential cross section measurement for the transverse momentum of the Higgs boson (center) and the number of jets (right). The sub-dominant component of the signal (VBF + VH + ttH) is denoted as XH.

See Figure 1 and Table 1.

Patient	Initial level(μg/cc)	w. Magnet	w. Magnet and Sound
Guglielmo B.	0.12	0.10	0.001
Ferrando di N.	0.15	0.11	< 0.0005

Table 1: place the caption here

3 Interpretations

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4 Conclusions

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References

[1] G. Aad *et al.* [ATLAS Collaboration], Phys. Lett. B **716**, 1 (2012) [arXiv:1207.7214 [hep-ex]].

[2] S. Chatrchyan *et al.* [CMS Collaboration], Phys. Lett. B **716**, 30 (2012) [arXiv:1207.7235 [hep-ex]].