

# HZZ Analysis

## Introduction to the Particle Physics Data Analysis

Aleksandra Poreba

- 1 Physics motivation
- 2 Expected number of events
- 3 Event selection
- 4 Background contributions
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# The Feynman diagram

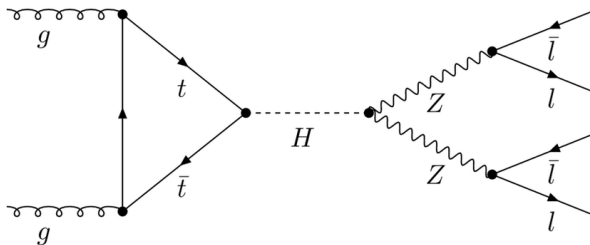


Figure: Feynman diagram for  $H \rightarrow ZZ^* \rightarrow 4\ell$  decay [3].

# Number of Leptons

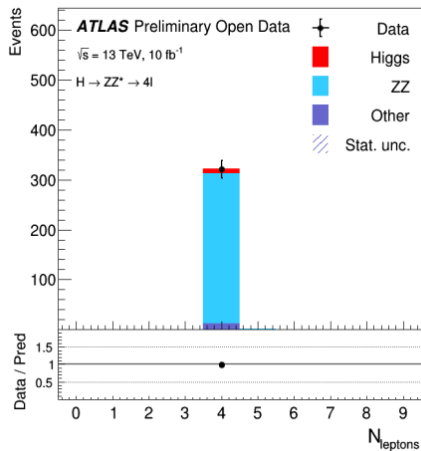


Figure: The histogram with number of leptons.

# Bibliography I



## The ATLAS collaboration

Review of the 13 TeV ATLAS Open Data release

<https://cds.cern.ch/record/2707171>



## Aaboud, Morad and others

Measurement of inclusive and differential cross sections in the  $H \rightarrow ZZ^* \rightarrow 4\ell$  decay channel in pp collisions at  $\sqrt{s} = 13$  TeV with the ATLAS detector

[http://dx.doi.org/10.1007/JHEP10\(2017\)132](http://dx.doi.org/10.1007/JHEP10(2017)132)



## Passon, Oliver

On the interpretation of Feynman diagrams, or, did the LHC experiments observe the Higgs to gamma gamma decay?