

# **E214 The ATLAS Experiment**

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## Contents

# 1 W-mass

With the finished calibration, the mass of the W-boson can now be measured. In order to determine the W-mass, we use a data set of actual ATLAS data containing  $W \rightarrow e\nu$  events, as well as several simulated data sets also containing  $W \rightarrow e\nu$  events. There is also a  $Z^0 \rightarrow e^+e^-$  data set to check the validity of the previous calibration. Finally there are data sets for QCD- and non-QCD background events.

## 1.1 Electron Calibration Verification

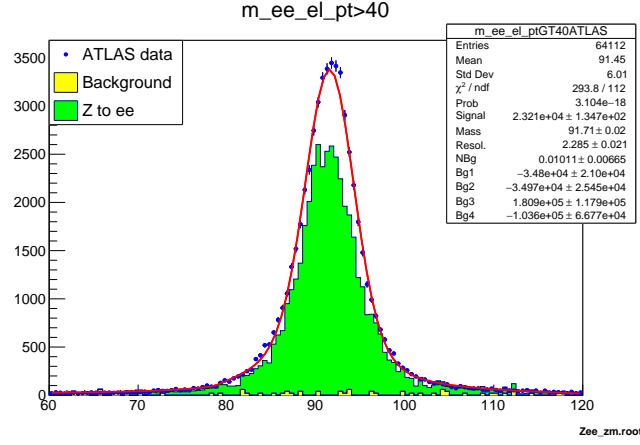


Figure 1:  $Z_{mass\_check\_el\_pt > cut}.pdf$

## 1.2 QCD scale factor

## 1.3 Cut selection

## 1.4 Gauge curves

## 1.5 W-mass

## A Appendix