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Studying the Z Boson with the ATLAS Detector at the LHC

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Abstract

This is the abstract

1 Introduction

The goal of the lab course was to analyze data from the ATLAS experiment and to calculate the mass of the Z Boson.

1.1 Drell-Yan Process

A Z Boson can be created during the so called "Drell-Yan" Process. When a quark and an anti-quark collide either a virtual photon or a Z Boson can be produced.

1.2 ATLAS Detector

The Detector consists of three main components: inner detector, calorimeters and the muon spectrometer. The inner detector is mainly used to reconstruct the trajectories of electrically charged particles.

2 Experimental procedure

Bibliography

[1] *Review of ATLAS Open Data 8 TeV datasets, tools and activities*. Tech. rep. ATL-OREACH-PUB-2018-001. Geneva: CERN, June 2018. URL: https://cds.cern.ch/record/2624572.