

The first measurement of the differential cross-sections for the electroweak production of ZZ in association with two jets in the four-leptons final state in 13 TeV proton-proton collision with the ATLAS detector.

A Dissertation

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The Faculty of the Graduate School of Arts and Sciences
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Department of Physics

Professor Gabriella Sciolla, Advisor

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

by
Prajita Bhattarai

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DOCTOR OF PHILOSOPHY

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ABSTRACT

The first measurement of the differential cross-sections for the electroweak production of ZZ in association with two jets in the four-leptons final state in 13 TeV proton-proton collision with the ATLAS detector.

A dissertation presented to the Faculty of the
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By Prajita Bhattarai

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Chapter II: **Theory**

1 Standard Model

blah blah

2 Short Comings of the Standard Model

blah blah

3 Measurement Motivation

blah blah

Chapter III: The Large Hadron Collider

4 ATLAS Detector

5 Particle Reconstruction

6 Future Upgrades

Chapter IV: **Analysis Overview**

This section discussed the overview of the analysis

- 7 Goals
- 8 Datasets and Monte Carlo Simulation
- 9 Phase Space Definition
- 10 Object and Event Selection
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Chapter V: **Analysis Strategy**

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A Contribution