

**SAMPLE FILE FOR A THESIS WITH THE  
‘PITTETD’ CLASS**

by

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Previous degree, institution, year

Submitted to the Graduate Faculty of  
the Department of Mathematics in partial fulfillment  
of the requirements for the degree of

**Doctor of Philosophy**

University of Pittsburgh

2017

UNIVERSITY OF PITTSBURGH  
MATHEMATICS DEPARTMENT

This dissertation was presented

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It was defended on

August 29, 2017

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## **1.0 INTRODUCTION**

We begin by saying that we do not really have much to say, but for the sake of clarity we divide our topic in chapters.

## 2.0 ATLAS

The topics treated in this chapter can be somewhat obscure. For humanitarian considerations, the chapter will be subdivided.

### 2.1 COORDINATE SYSTEM USED IN ATLAS

ATLAS adopted a common coordinates system based on the geometry of LHC, with certain modifications due to convenience. The origin of the coordinate system is defined as the interaction point, which is located in the center of the detector. The z-axis is oriented to be along the beam line, and perpendicular to that an x-y plane, also conventionally called the transverse plane, is defined. The positive Cartesian x-axis points towards the center of the LHC, and the y-axis points upwards just as the right-hand convention. We define the half of the detector that is located on the positive z-axis the “A-side”, where the other half is called the “C-side”. On the transverse plane, we commonly apply the standard polar coordinates, where  $r$  and  $\phi$  represent the radius and the azimuthal angle. The polar angle  $\theta$  however, is usually reported in terms of “pseudorapidity”  $\eta$ , where

$$\eta = -\ln\left[\tan\left(\frac{\theta}{2}\right)\right] \tag{2.1}$$

#### 2.1.1 First subsection of the section

This is well-known topic, and we shall discuss it no more.

### **2.1.2 Second subsection of the section**

This is a very complicated topic and we shall discuss it in our next paper.

### **3.0 CONCLUSIONS**

This is the second chapter of the present dissertation. It is more interesting than the first one, for it is the last one.