Thesis Title

A thesis presented
by
John Harvard
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Thesis Title

Abstract

While the search for ever heavier Beyond the Standard Model (BSM) particles is a popular excercise at the energy frontier, the search for XXX has been less explored. This thesis presents a search for YYY in a novel 140 fb^{-1} dataset collected by the ATLAS experiment during Run 2 at the Large Hadron Collider (LHC) at $\sqrt{s} = 13$ TeV. The dataset is unique in that it is collected at the

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The LHC and the ATLAS

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facete et urbane Stoicos irridente, statua est in quo a nobis philosophia defensa et.

t	1	2	3
y	0.3s	0.4s	0.8s

Table 1.1: Timing results

1.1 Calorimeter

1.1.1 Electromagnetic Calorimetry (ECal)

ATLAS uses Liquid Argon (LAr) calorimeter for electromagnetic energy measurements in both the central region[1] ($|\eta| < 1.475$) and end-caps regions[2] ($1.375 < |\eta| < 3.2$). Together, they provide three layers of calorimeter cells with varying granularities. Additionally, in the $|\eta| < 1.8$ region, a LAr presampler sits in front of the first layer of the LAr ECal and is used to correct the energy loss in the passive material between LAr ECal and the IP. Figure 1.1 shows the schematic of the EMB in regions with four layers.

Figure 1.1: Schematic of the EM Barrel Calorimeter, showing four layers including the presampler (PS) layer

1.2 Some equations

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[1]Electromagnetic Barrel Calorimeter, or EMB

[2]Electromagnetic Endcap Calorimeter, or EMEC

$$0.002(x + 89.6)^{-1.06 \log(x)} \tag{1.1}$$

A

Appendix

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magnam aliquam quaerat. Figure A.1

$$a^2 + b^2 = c^2 \tag{A.1}$$

A.1 Appendix is hard

$$a^3 + b^3 = c^3 \tag{A.2}$$

Figure A.1: Here's a figure in Appendix