



DELPHES Tutorial (solutions)

Michele Selvaggi

CERN

PREFIT school 09/03/2020

TUTORIAL

In this tutorial you will learn:

- how to produce a Delphes ROOT sample starting from an HepMC file
- how to navigate through the Delphes output
- how to analyse the Delphes output interactively and with a simple python script
- to understand the configuration file (detector card)
- how to change simple parameters such as reconstruction efficiency and detector resolution

For simplicity we will study simple Drell Yan and Z' (TeV) samples:

- $pp \rightarrow Z \rightarrow ee/\mu\mu$
- $pp \rightarrow Z' \rightarrow ee/\mu\mu$

TUTORIAL

Make sure you have properly installed ROOT, Pythia8 and Delphes
or have installed the Virtual Machine:

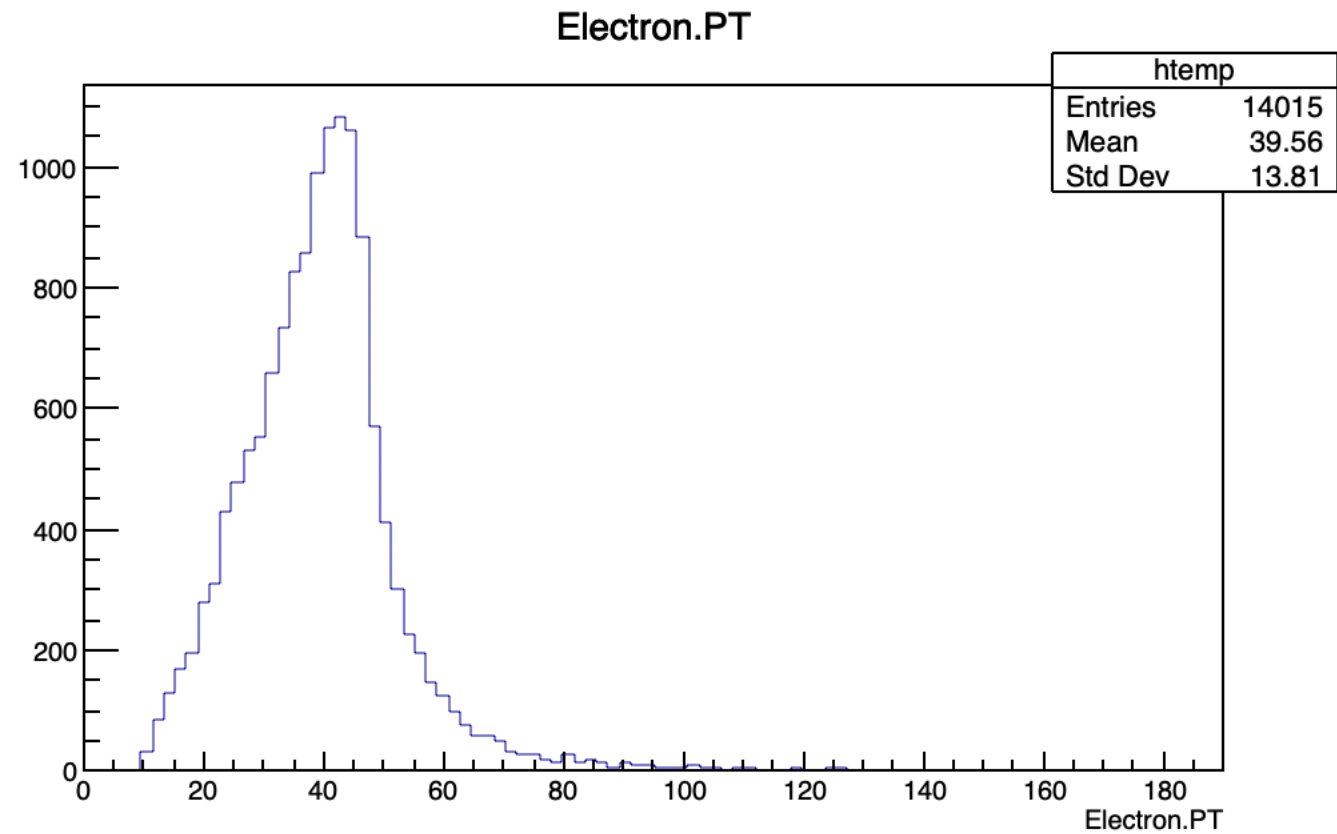
https://twiki.cern.ch/twiki/bin/view/VBSCan/PREFIT20#How_to_setup_the_tools_code_AN2

Tutorial:

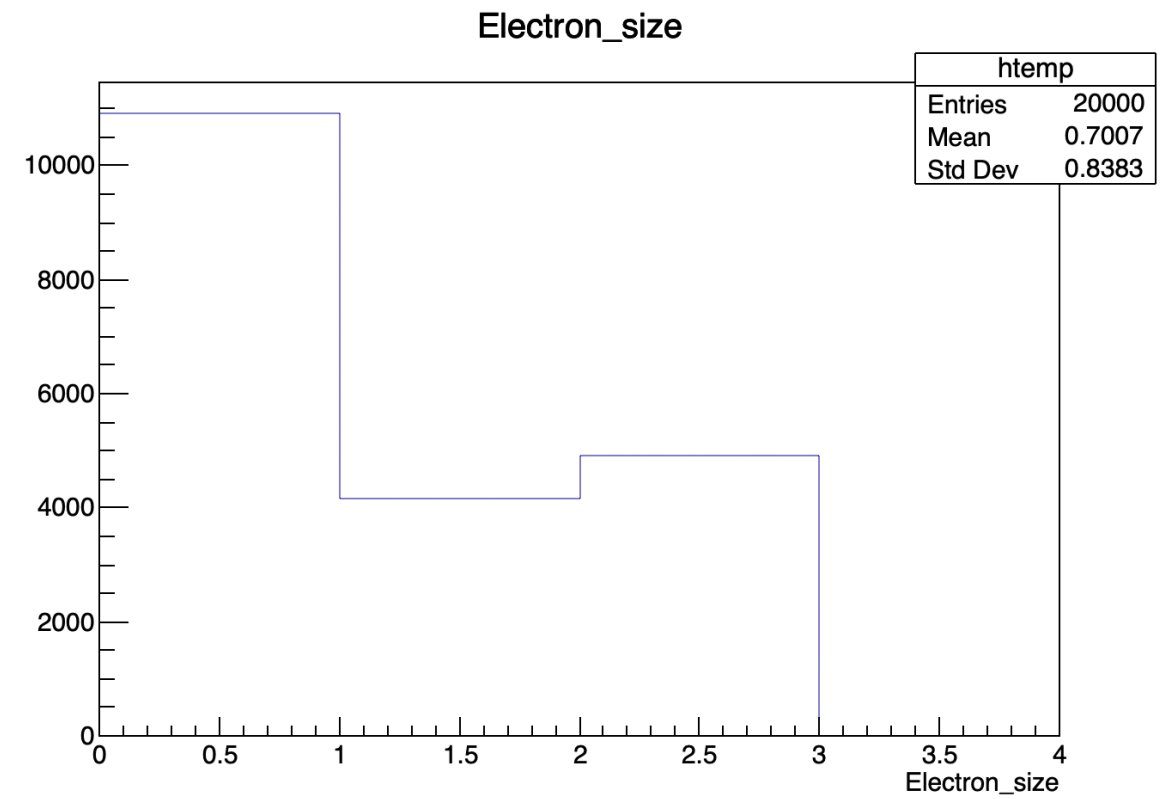
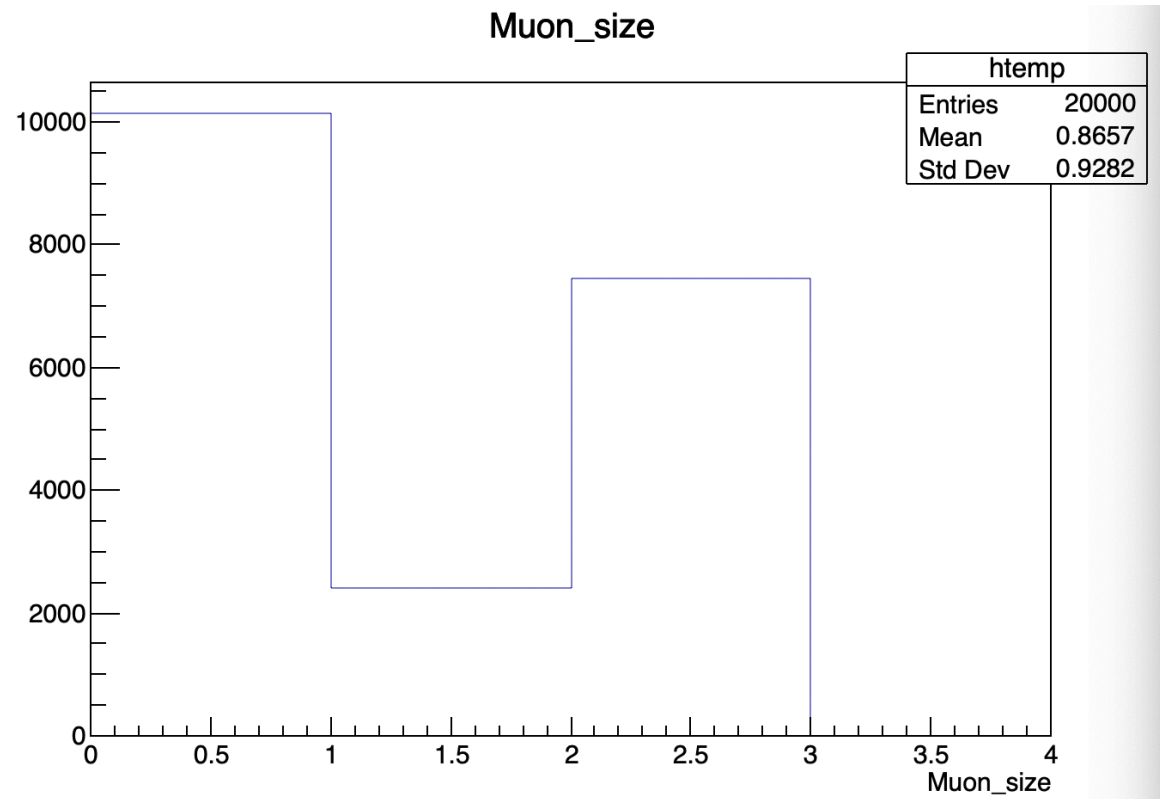
<https://cp3.irmp.ucl.ac.be/projects/delphes/wiki/WorkBook/Tutorials/Prefit>

I will be stay connected and Alessia Saggio will be helping in live (thanks!)

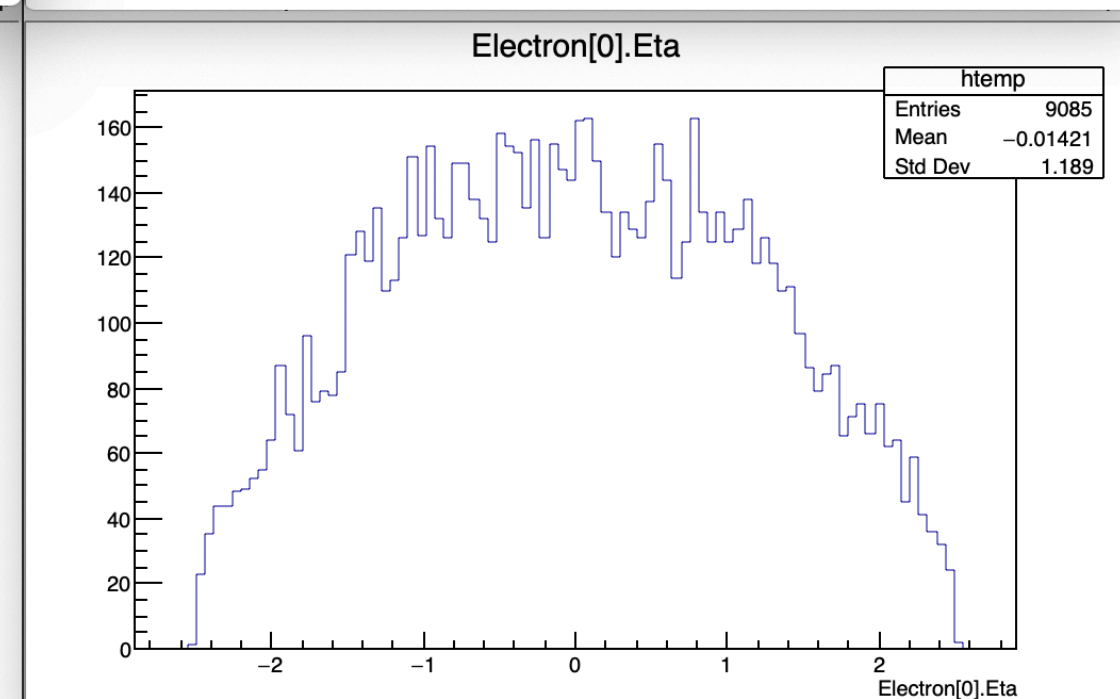
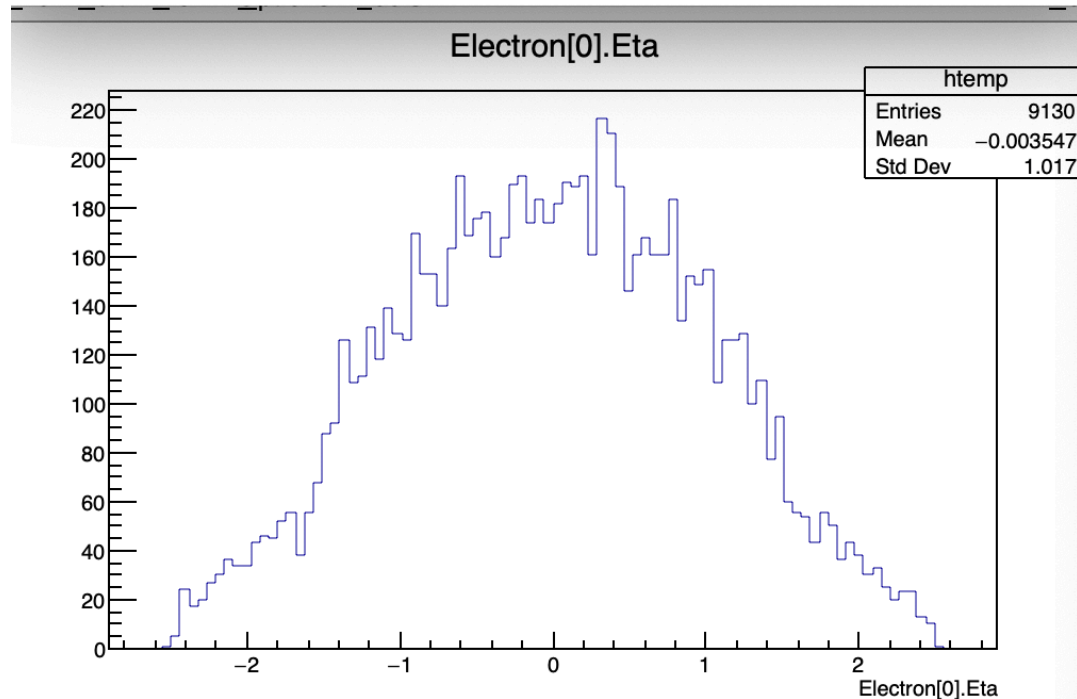
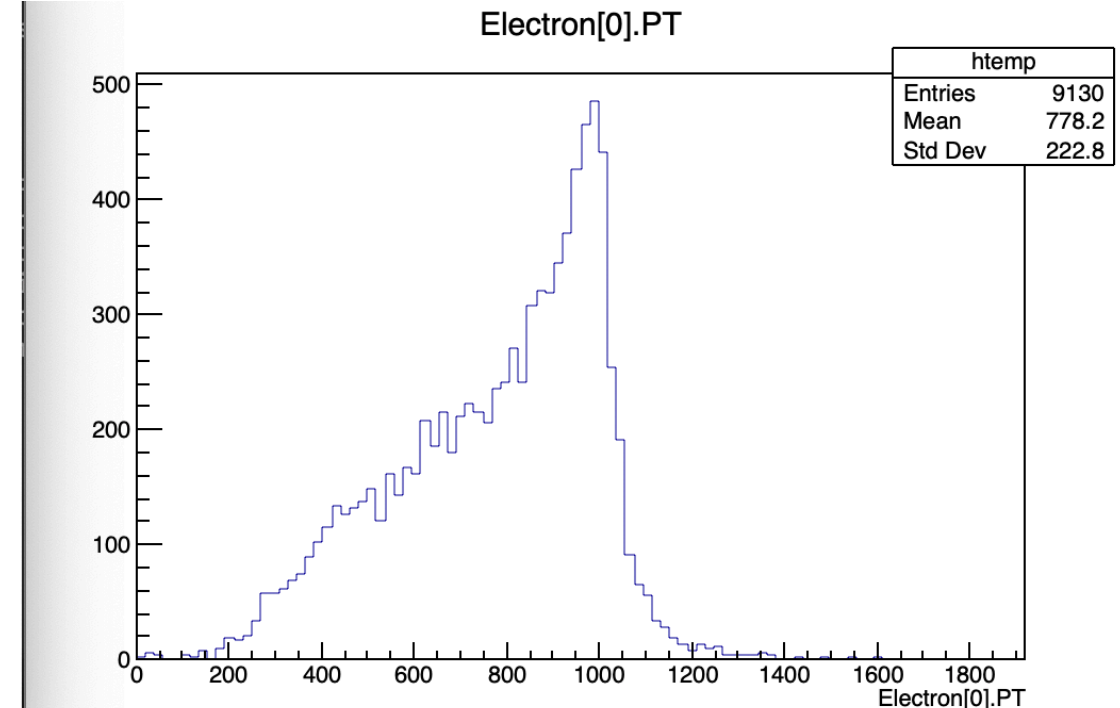
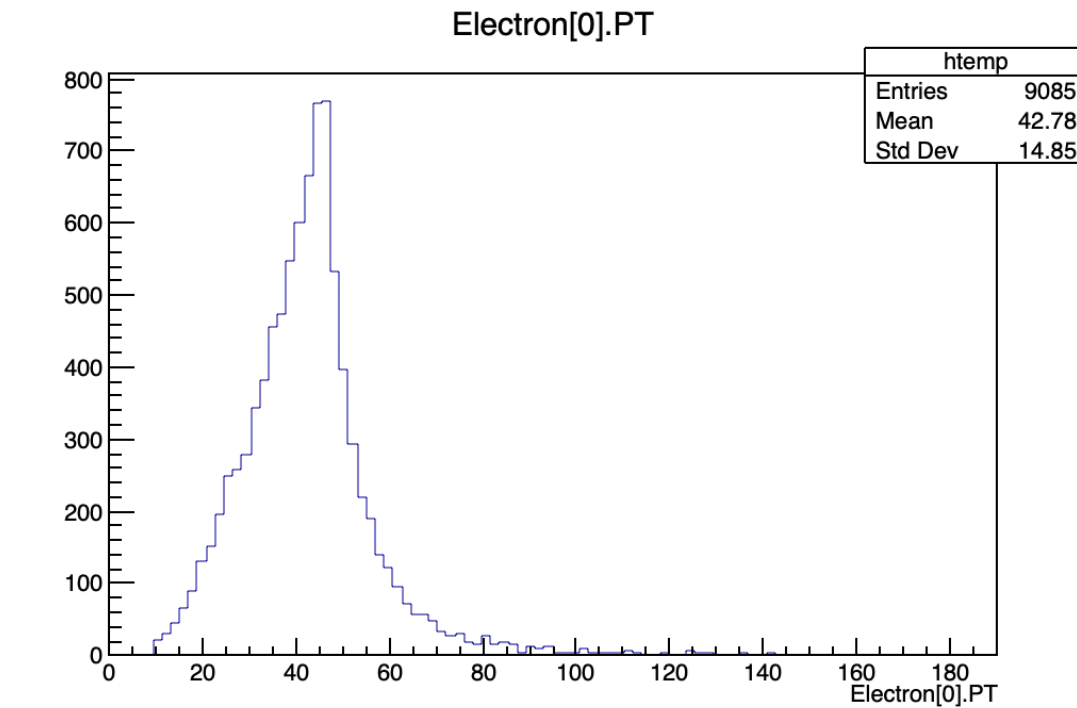
Solutions - II.1)



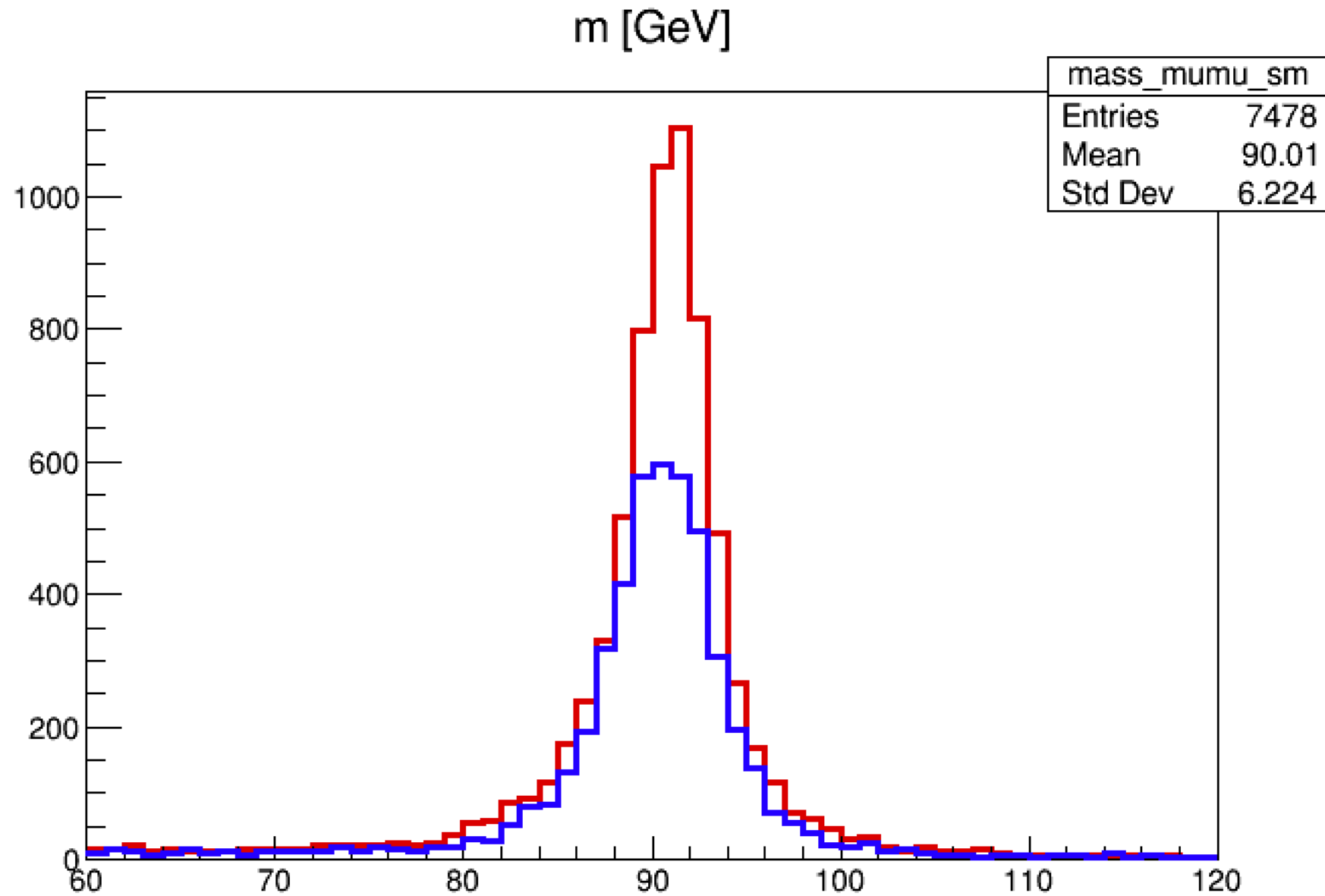
Solutions - II.2)



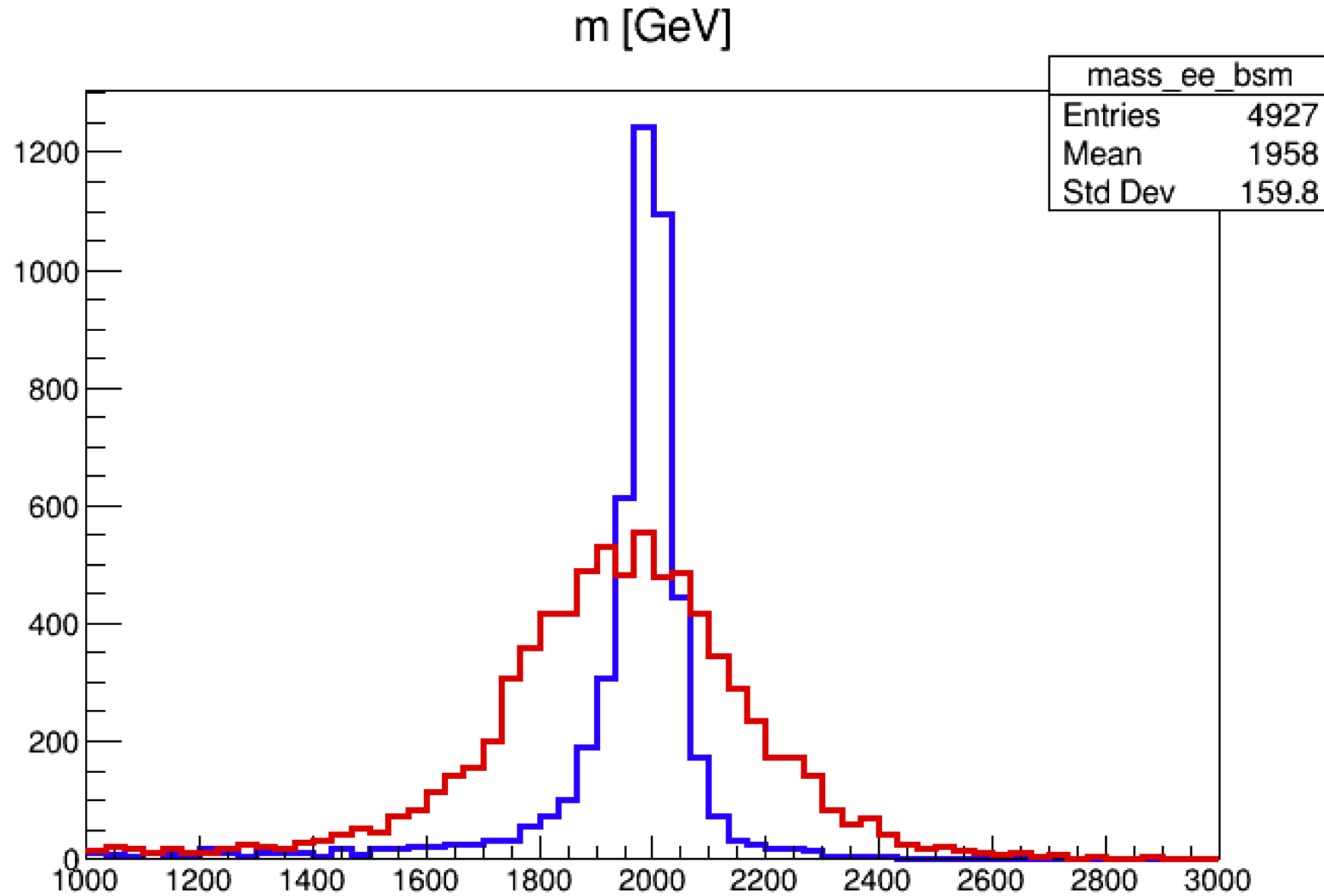
Solutions - II.3)



Solutions -III.3)



Solutions - III.4)



Solutions - IV.4)

