

Delphes fast simulation studies

1

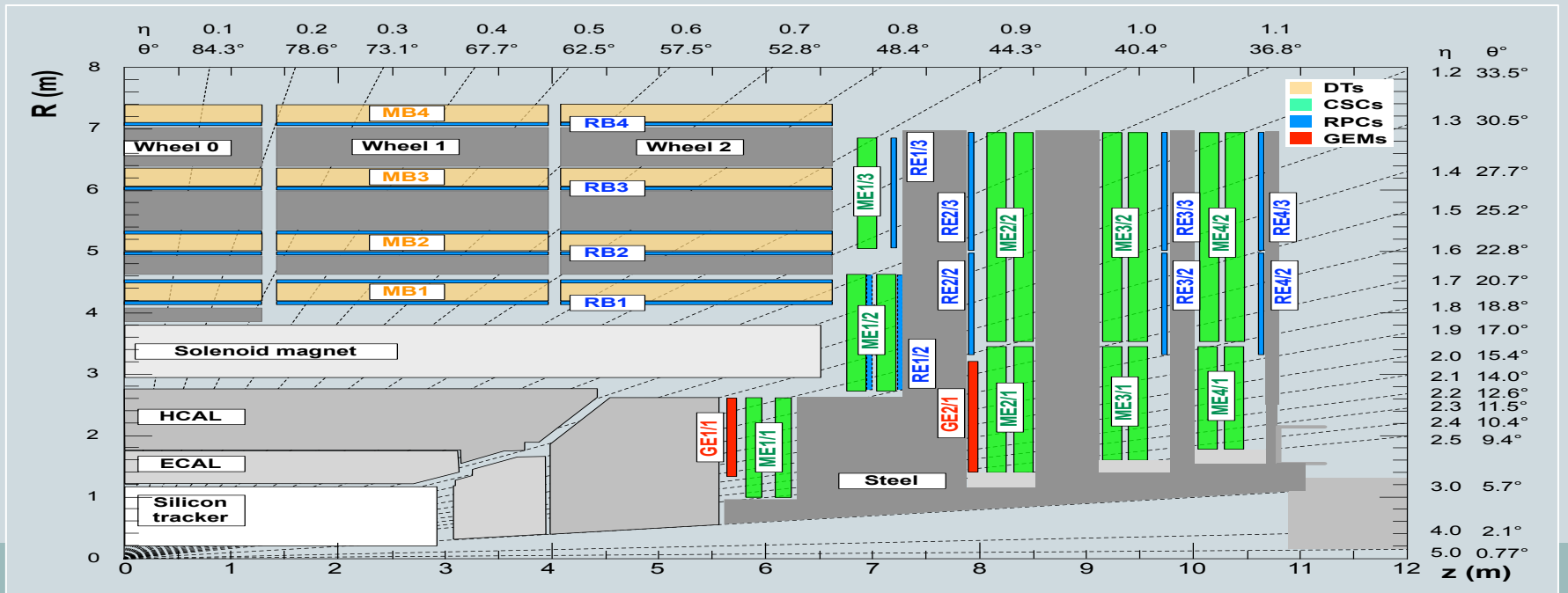
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WP2**

Aim of work

2

- Studying the possibility of installing new RPC in the high eta region $1.6 < \eta < 2.4$ through studying the physics process:

$B_s \longrightarrow \mu\mu$



Activity Done

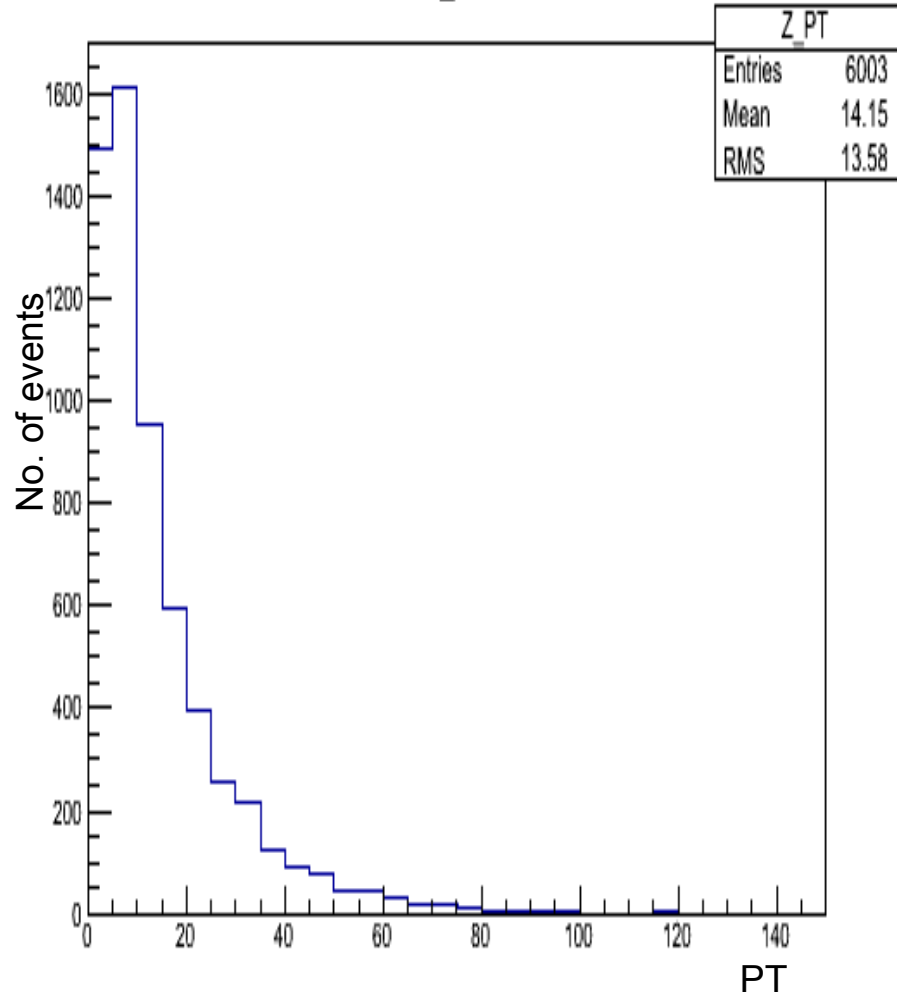
3

1. Started to learn about Delphes ,install it ,how to process it ,trying to understand the configuration files and doing exercise provided in Delphes.
2. Started with producing some plots for Z to dielectron as a beginning the next slide represents an example for one of the plots that produced

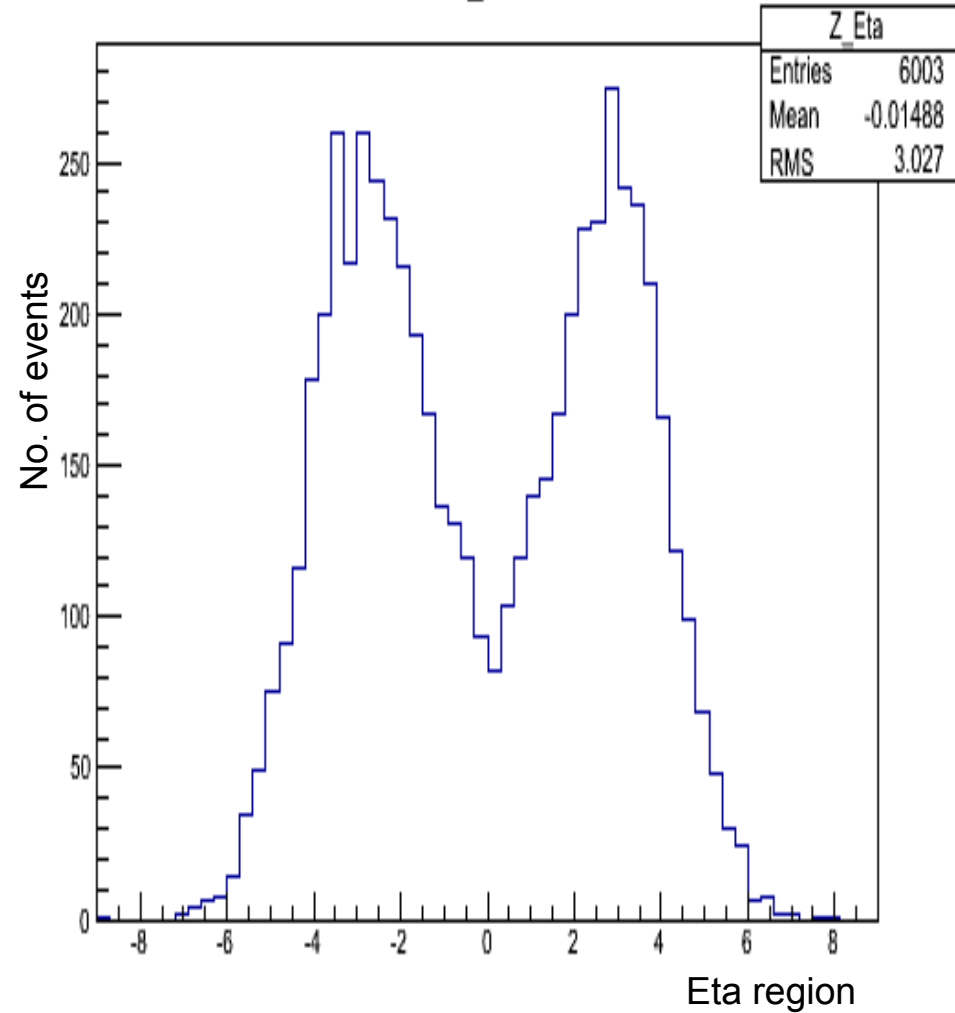
Z to ee

4

Z_PT



Z_Eta



Activity Done

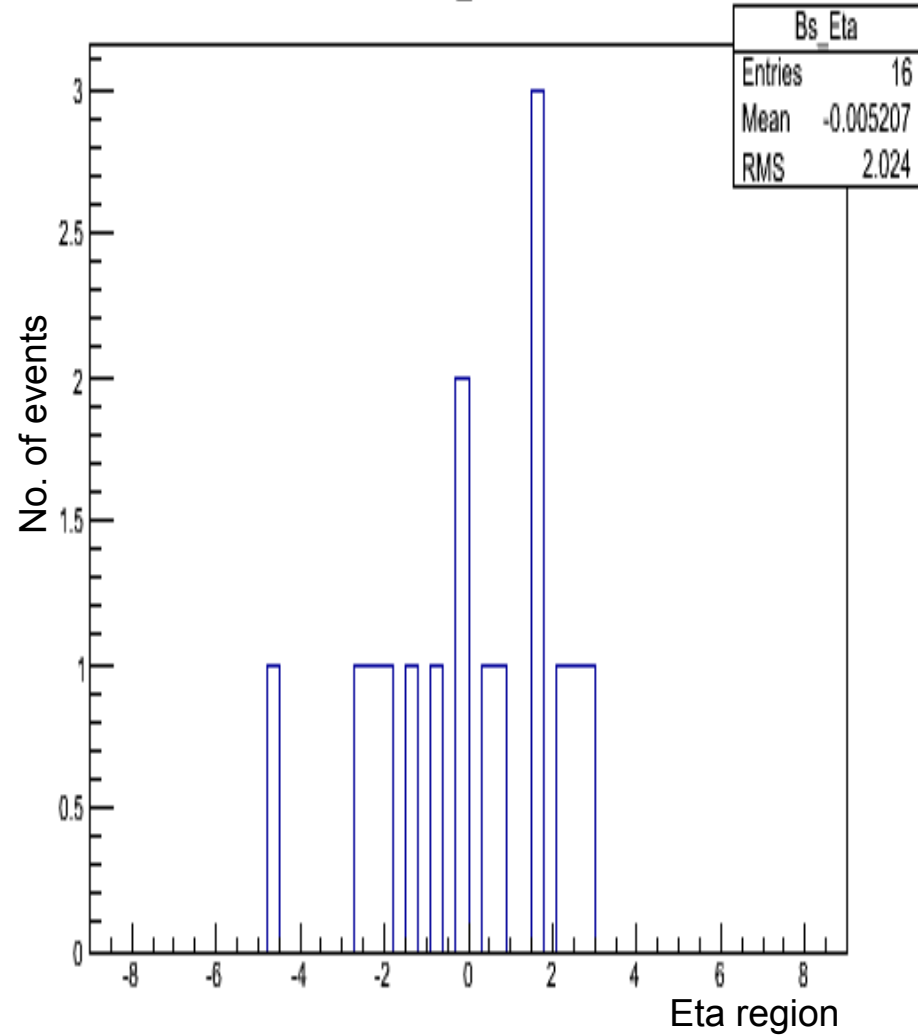
5

After that I started to process hepmc file that contains Bs to mu mu events ,and according to the following plots(examples of the plots produced) we've small fraction of mu mu events so we need to generate large sample.

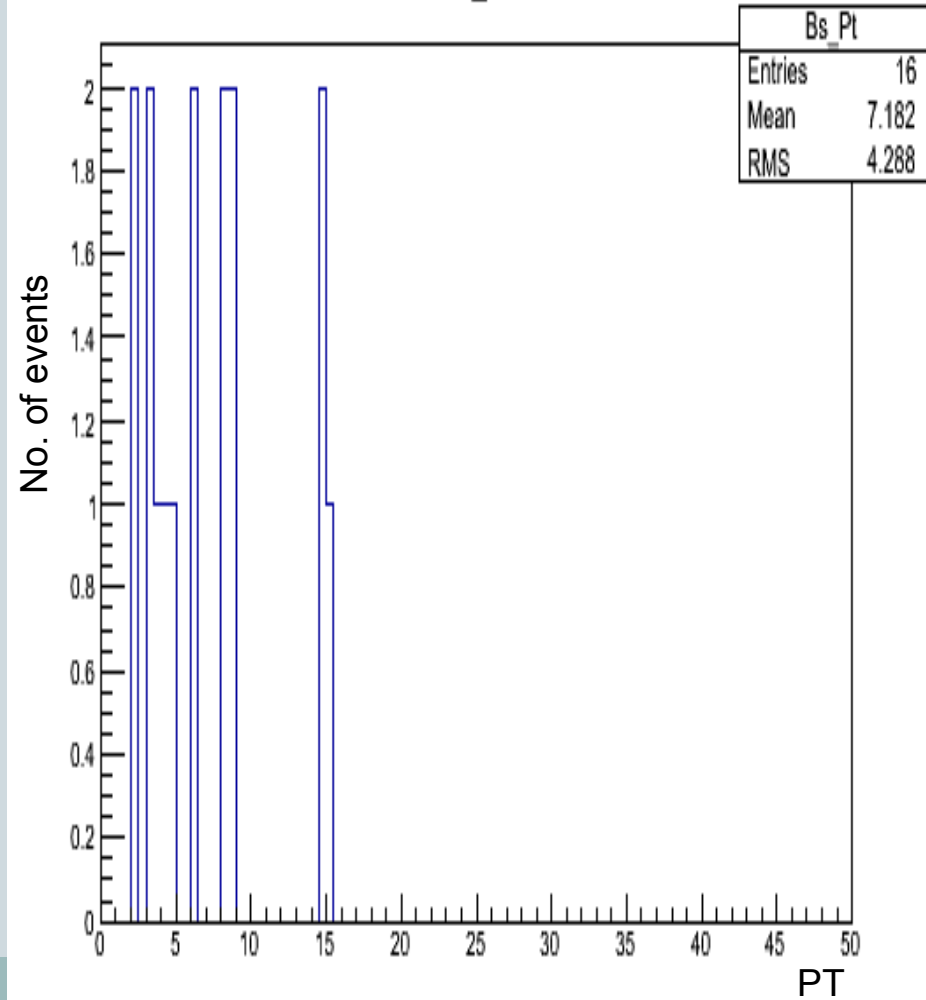
Bs to mu mu

6

Bs_Eta



Bs_Pt



Activity Done

7

- Therefore, I needed to learn how to generate such processes using Madgraph5, unfortunately Bs is not implemented in madgraph, but can be added, so I started with producing Z to $\mu\mu$ sample.
- Meanwhile time implemented for muons (just initial step) by Michele Selvaggi (member of Delphes team thanks to him)

To Be done

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- Trying to understand the plots produced after time implemented and discussing them with Delphes experts.
- Study how to generate Bs to mu mu with large sample using Madgraph or Pythia to start Triggering and reconstruction studies for high Eta region.

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and
Thank you!!