

Low Mass Drell-Yan Status Report



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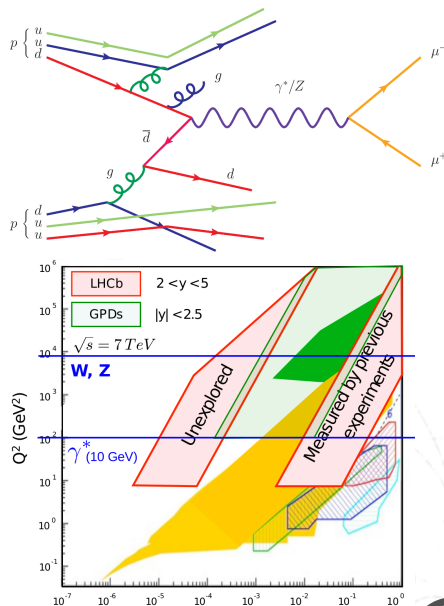


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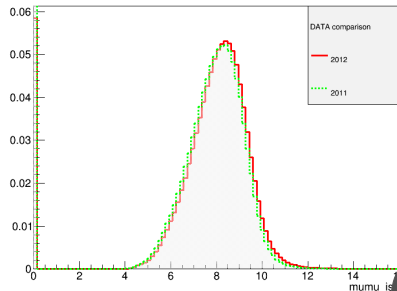
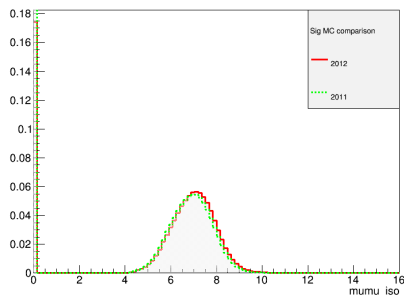
Introduction to Drell-Yan

- Drell-Yan are process of two quark annihilations in which neutral current couples to two leptons.
- The cross section of this process depends on two components:
 - Hard scattering process \Rightarrow NNLO pQCD.
 - Parton Distribution Function (PDF).
- Measurement of the cross section have a high sensitivity to the PDF
- Due to unique coverage $2 < y < 5$ LHCb probes the $Q^2 - x$ region not covered by other experiments.



Selection

- Analysis moved to stripping 20.
- Plan is to measure separately 7 TeV and 8 TeV data.
- In addition we will provide the ratio of both samples), where many systematic cancel.
- Overall observed a good agreement between 2011 and 2012 data.
- Requested large MC sample to reduce the systematics errors.
- Analysis aims at DIS 2016.



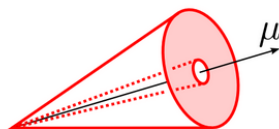
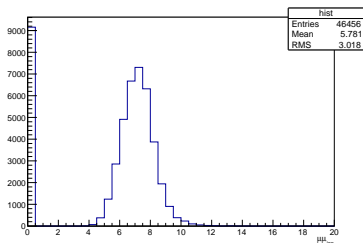
Isolation

- Drell-Yan unfortunately do not peak in mass \rightarrow need another variable to control the purity.
- Find mass independent isolation variable such that the signal template can be determined from data.
- We define an isolation variable:

$$\mu_{\text{iso}} = \log(p_T^{\text{cone}}(\mu, 0.5) - p_T^{\text{cone}}(\mu, 0.1))$$

- For two muons we take the maximum of the two isolations:

$$\mu\mu_{\text{iso}} = \max(\mu_{\text{iso}}^+, \mu_{\text{iso}}^-)$$



Conclusions

- Analysis strategy finalized.
- Aim: DIS 2016
- Early 2016: WG sign off.

