Sea Quark Polarization Measurement in Forward Rapidity via W-Boson Production

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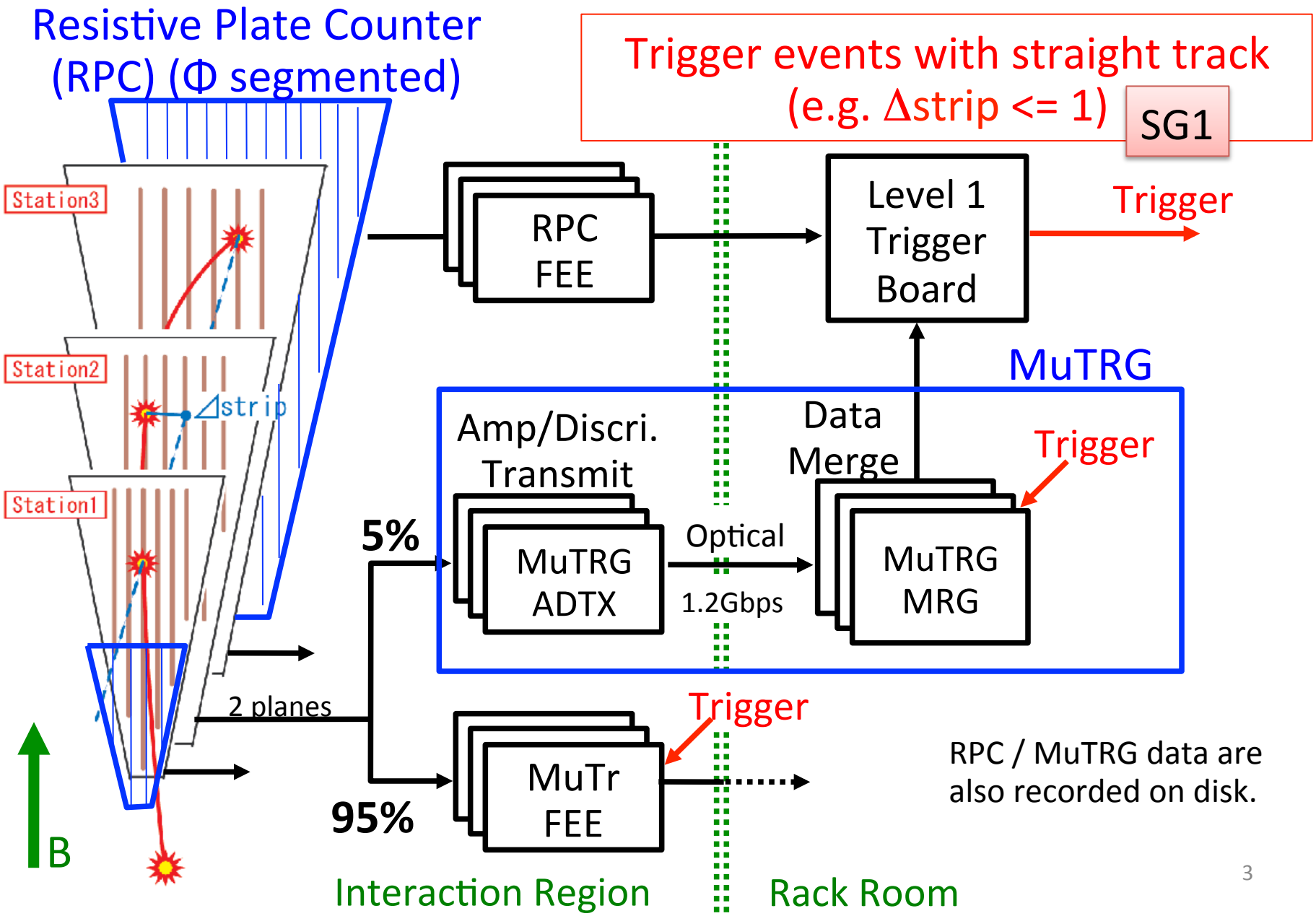
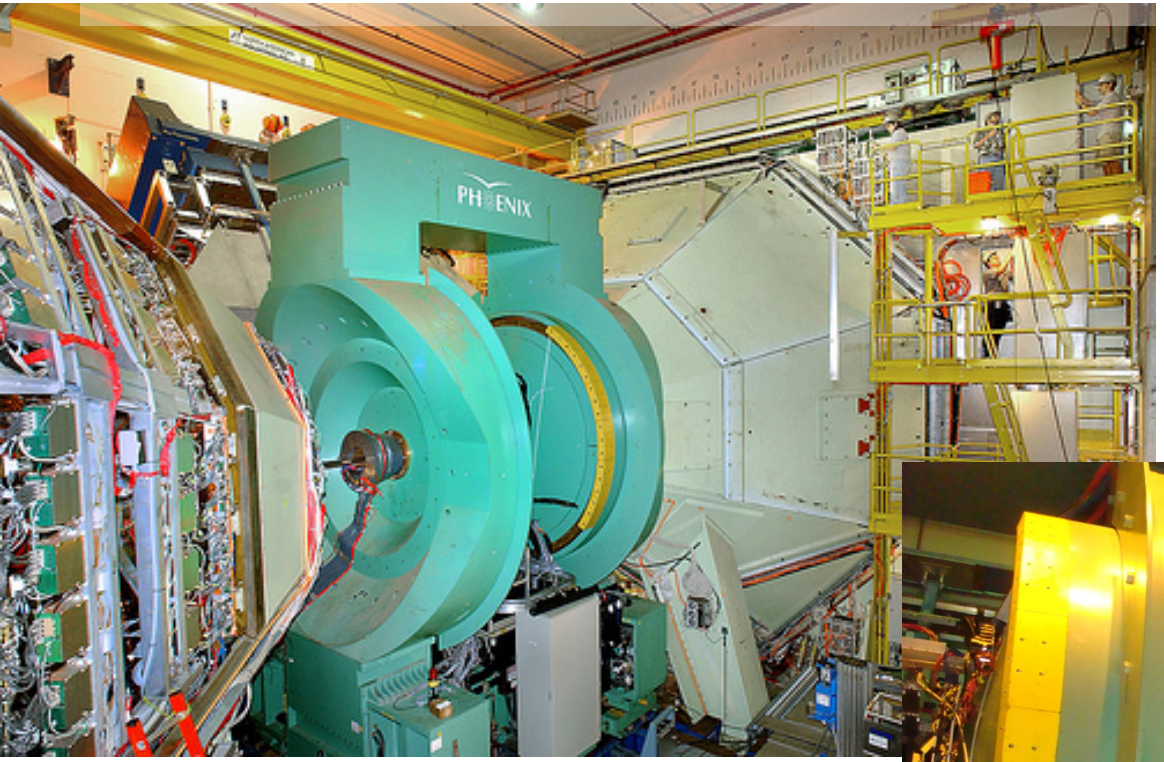
*Thesis Topic for Run11 510GeV p-p

W Trigger System



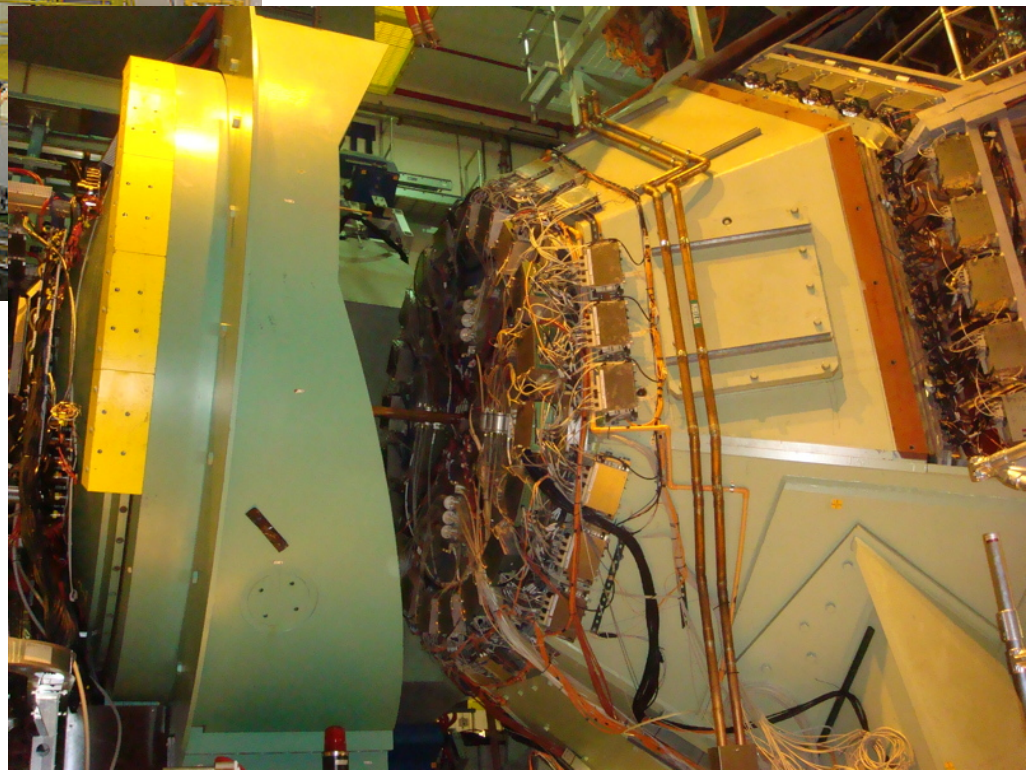
RPC / MuTRG data are also recorded on disk.

New MuTRIG-FEE in North Arm

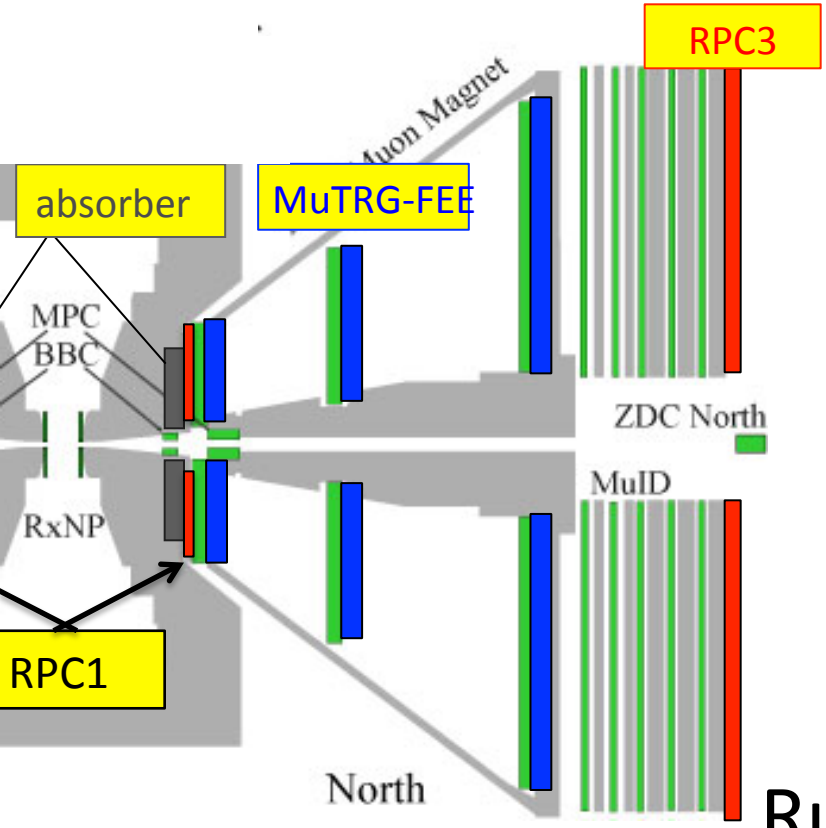


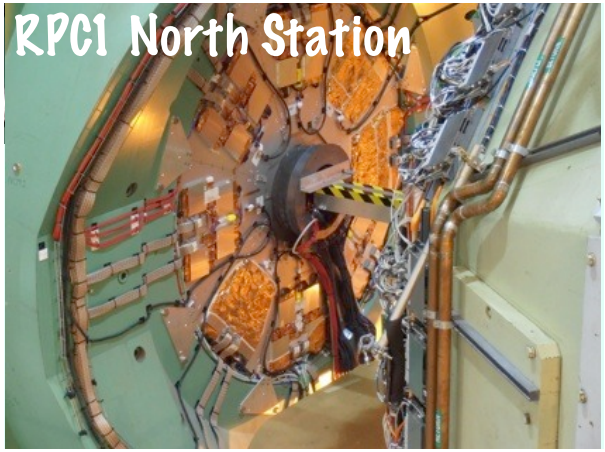
↑ Before Install

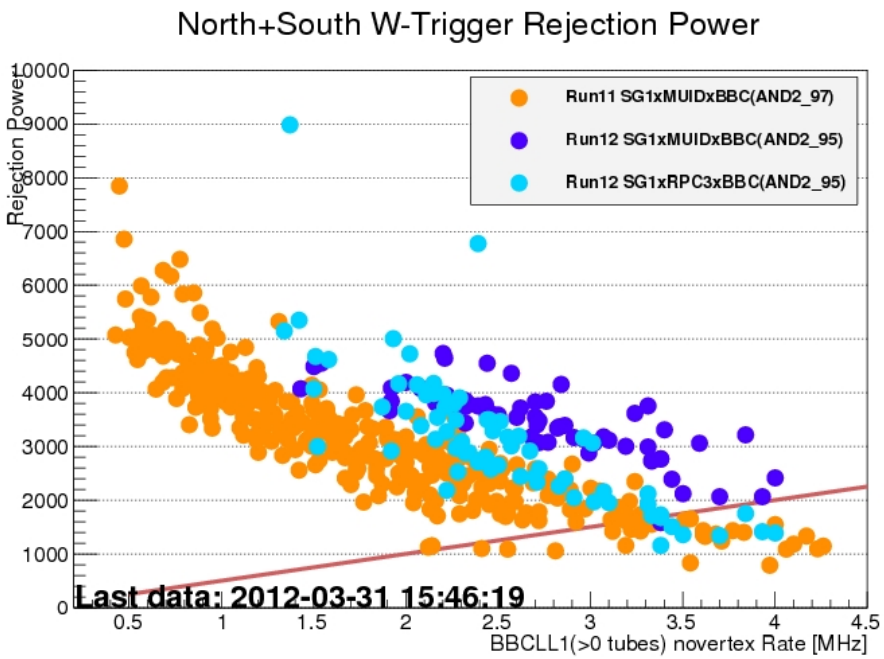
2008 Install→



MuTrig-FEE Run11/Run12 Reiection





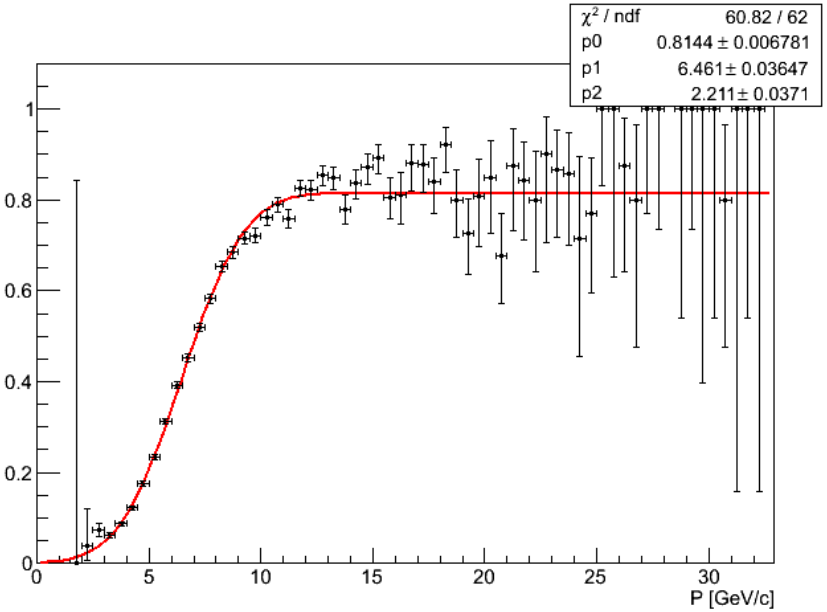


Run11 : SG1 x MuID x BBC

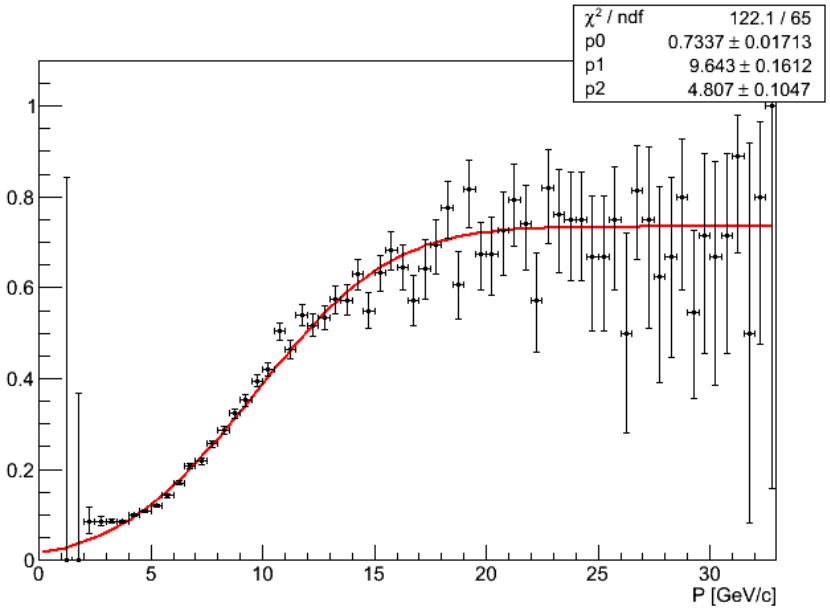
Run12 : SG1 x RPC3 x BBC

Run13 : SG1 x RPC1 x RPC3 x BBC

SG1 Efficiency



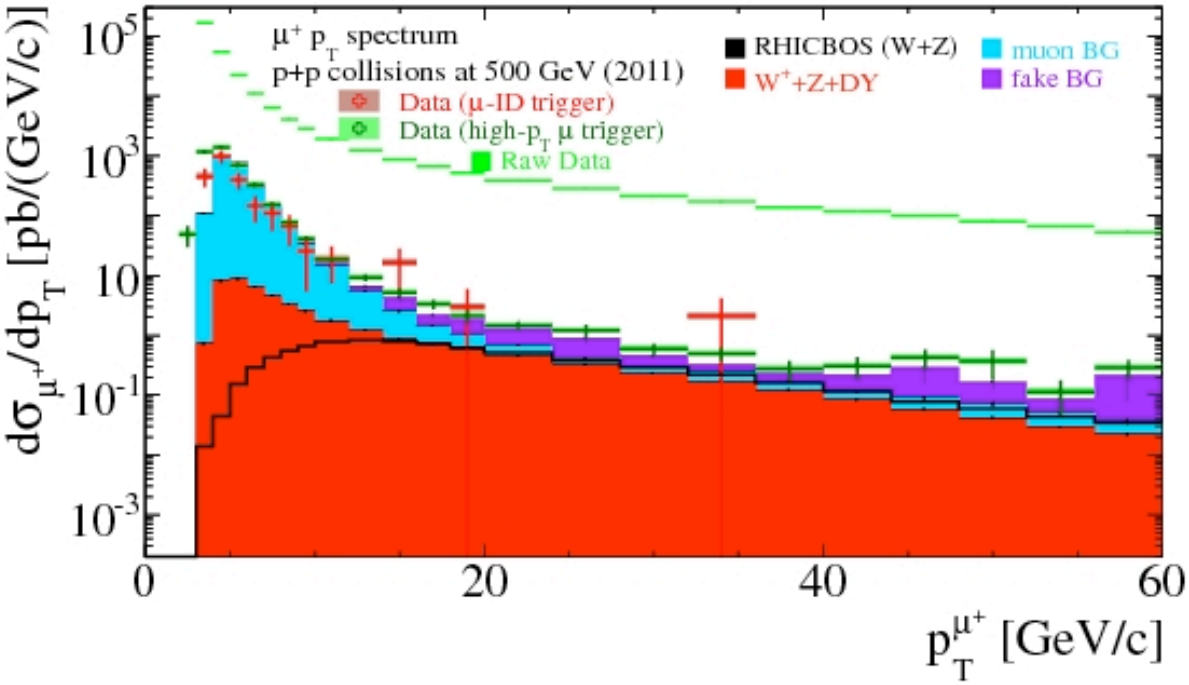
SG1 South Trigger Efficiency



SG1 North Trigger Efficiency

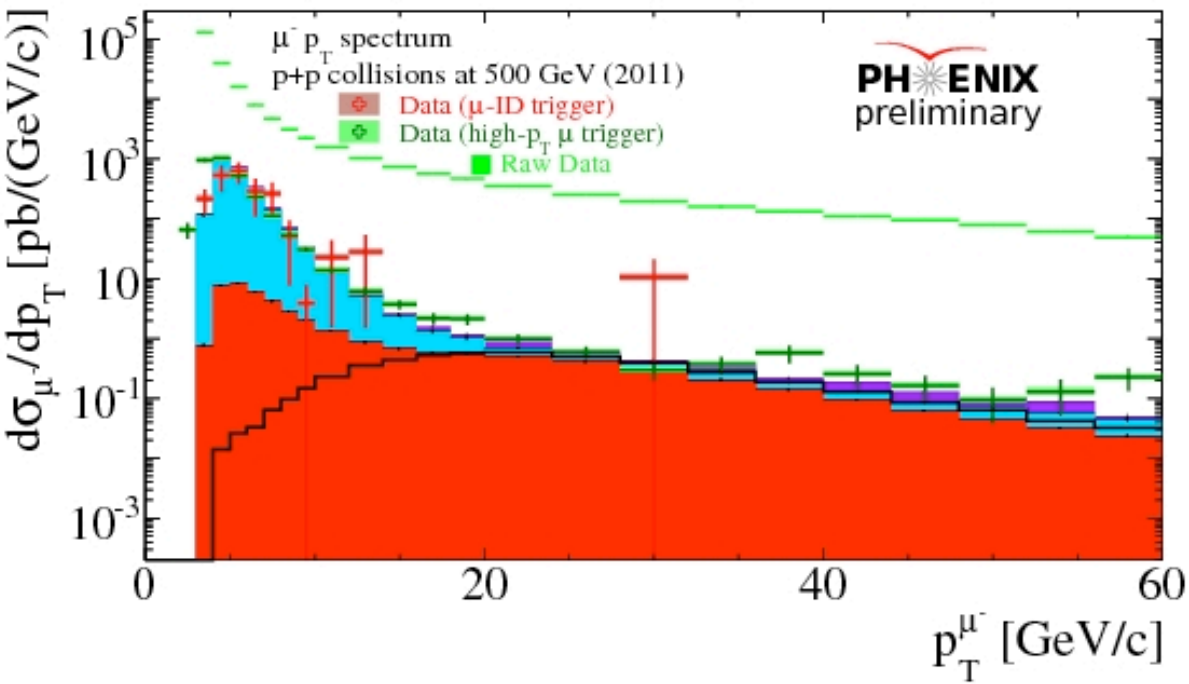
Arm	Efficiency at Plateau [%]	Turn-on Point [GeV/c]
South	81.4	6.5
North	73.4	9.6

P_T Spectra



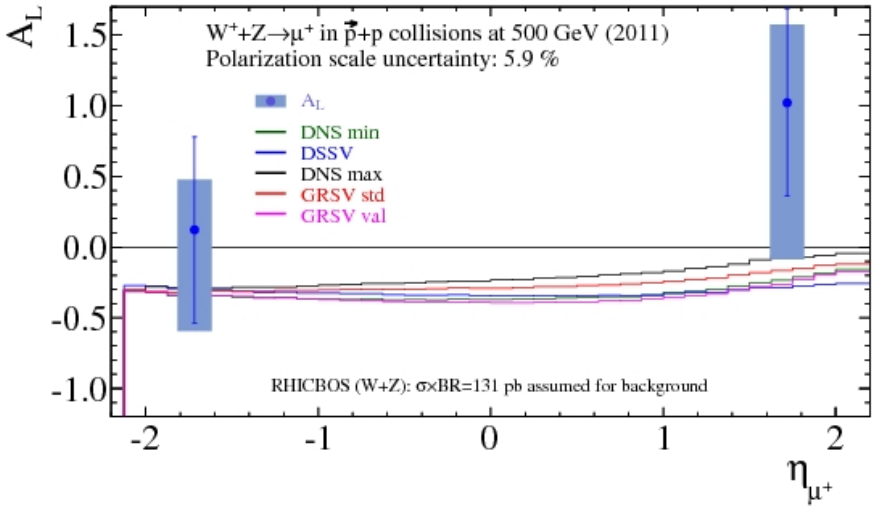
Backgrounds:
- Heavy Flavor Decay mu
- Hadron Decay mu

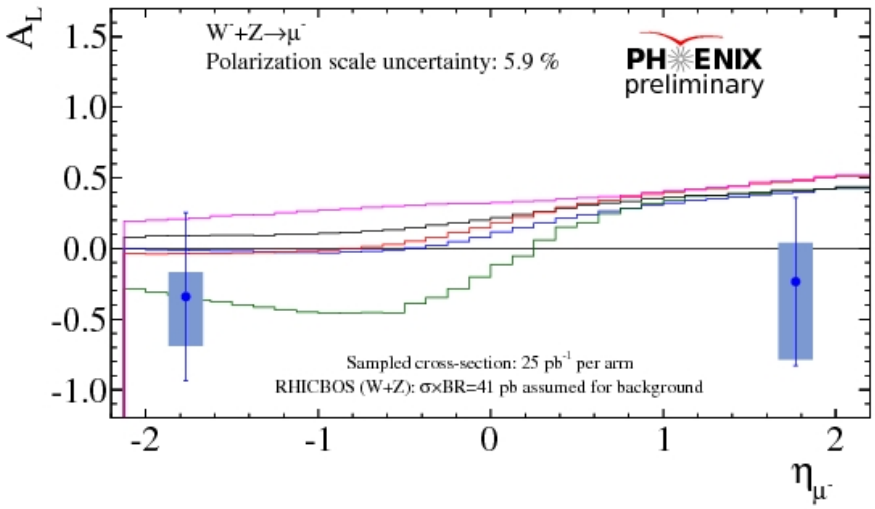
Signal/Backgrounds ~ 1



Momentum Smearing > 40GeV

First Forward Rapidity A_L^W





The first W asymmetry measurement in forward rapidity

The statistical precision will be improved in Run11, Run12

Run	Integ. Lumi [pb^{-1}]
11	30
12	50
13	250

Summary

- Past several years, RBRC played key role to make W measurement feasible.
  - High Momentum Trigger (R&D, Operation)
  - MC Simulation
  - Offline Analysis
- Run11 Results are close to be final
- Run12 analysis underway
- Significantly higher statistics Run13 to achieve our goal.