Status / Plans
STAR polarized p+p program
Run 12

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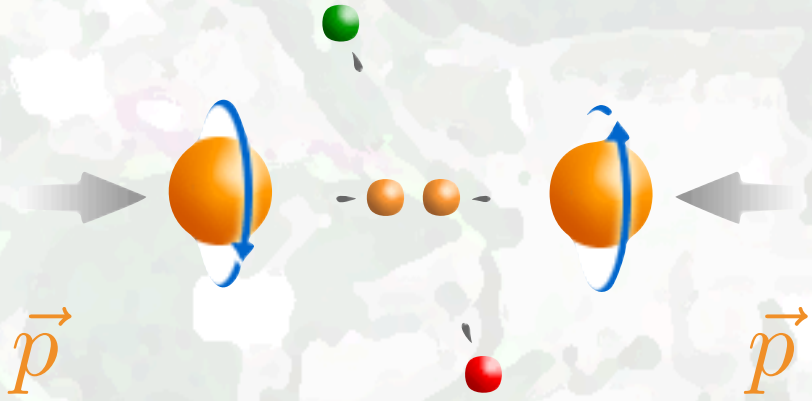
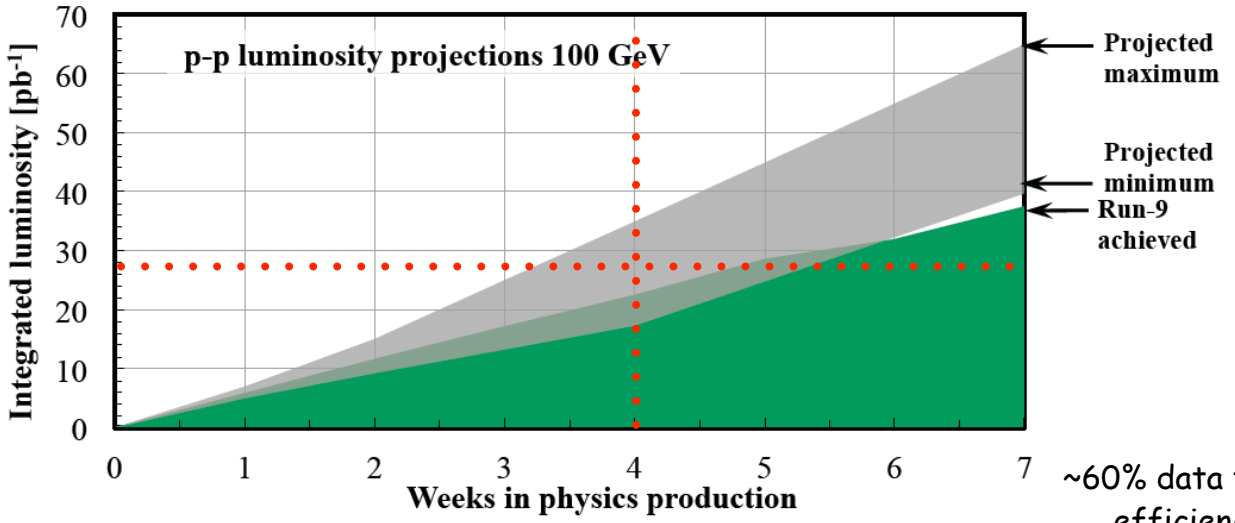


STAR Physics program

- Overview
  - Transverse/vertical p+p beam polarization at 200GeV
    - Mid-rapidity pion Collins asymmetry and IFF measurements
    - Forward photon A_N measurement
    - Heavy-Ion reference data sample
    - FGT commissioning
  - Longitudinal p+p beam polarization at 500GeV
    - W A_L measurement / FGT data taking
    - Jet A_{LL} measurements
  - 193GeV U+U program
    - v_2 measurements
    - R_{AA} measurements

STAR Physics program

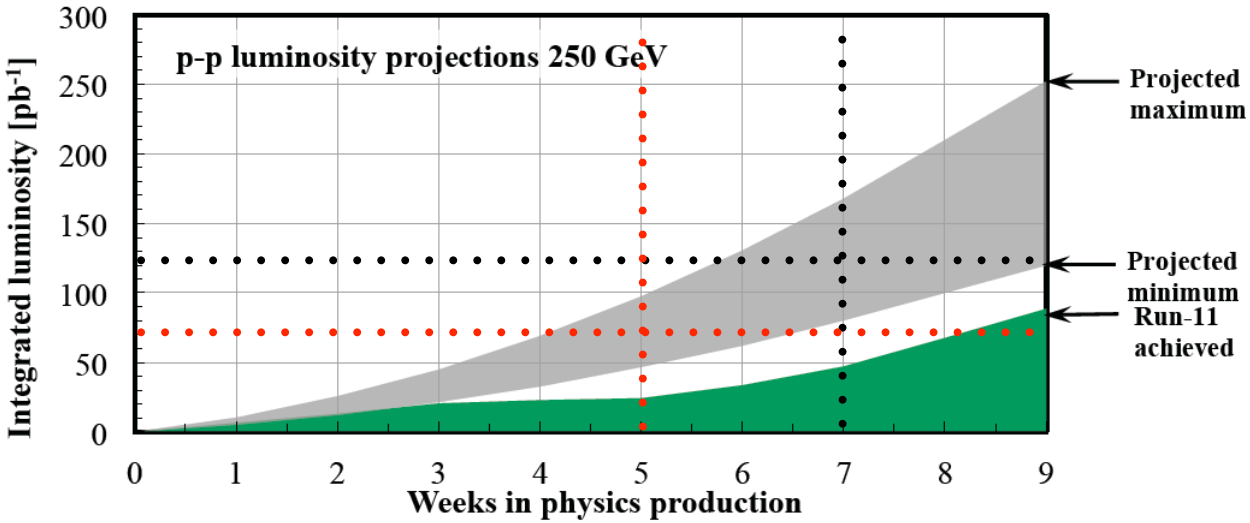
- Assumptions : 200GeV trans. / 500GeV long. programs



~60% data taking efficiency!

~ 4 weeks of vertical / transverse beam operation at 200GeV:

Expect ~16pb^{-1} recorded luminosity at 60% beam polarization

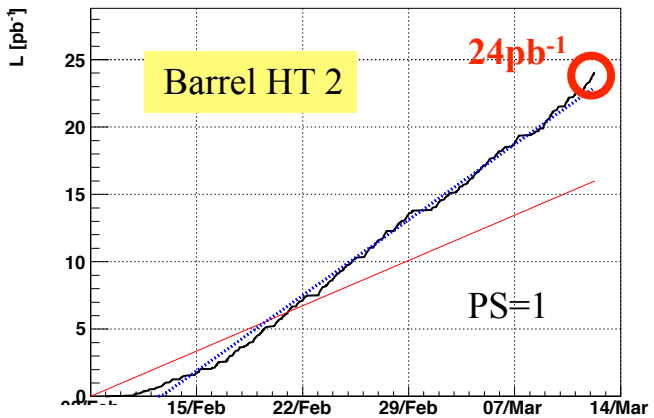


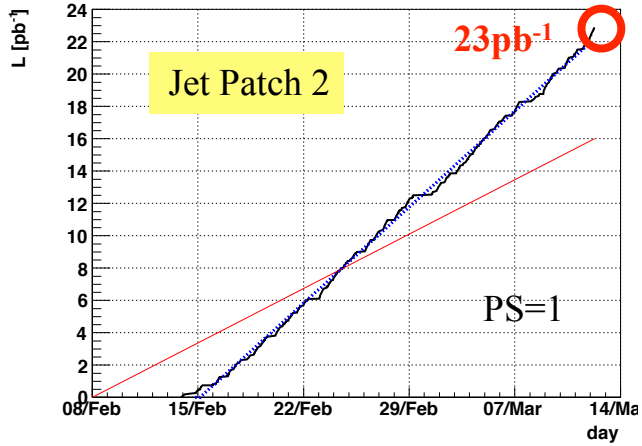
~ 5 (7) weeks of longitudinal beam operation at 500GeV:

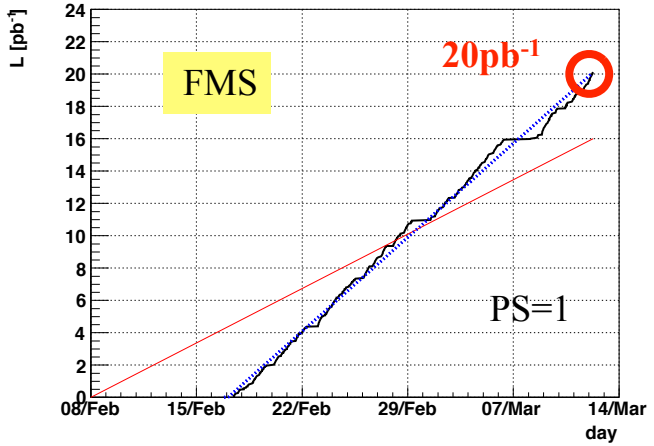
Expect ~ 45 (75) pb^{-1} recorded luminosity at 50% beam polarization

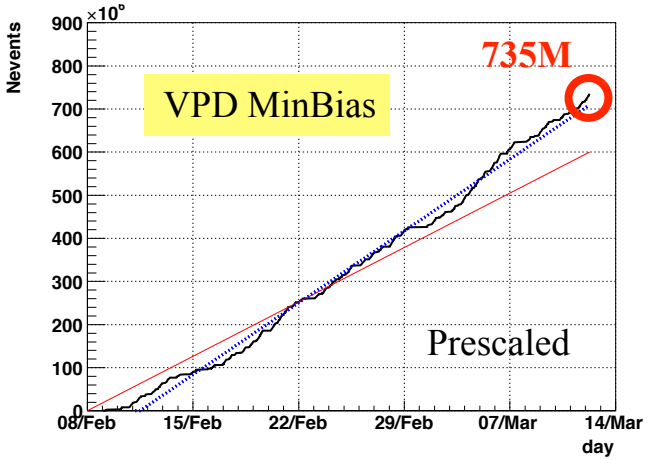
STAR Physics program

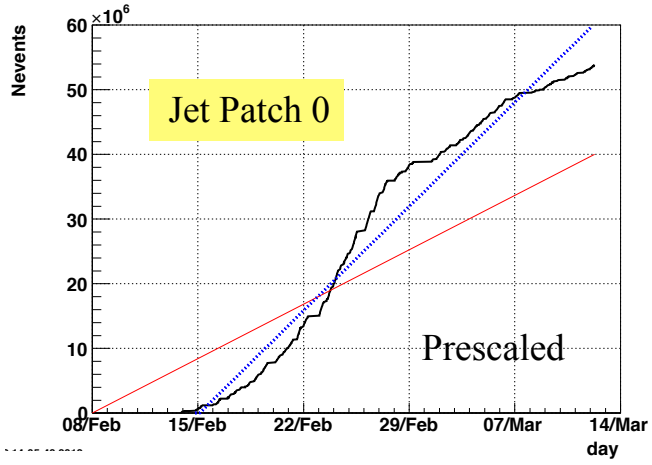
- Actual performance: 200GeV trans. program

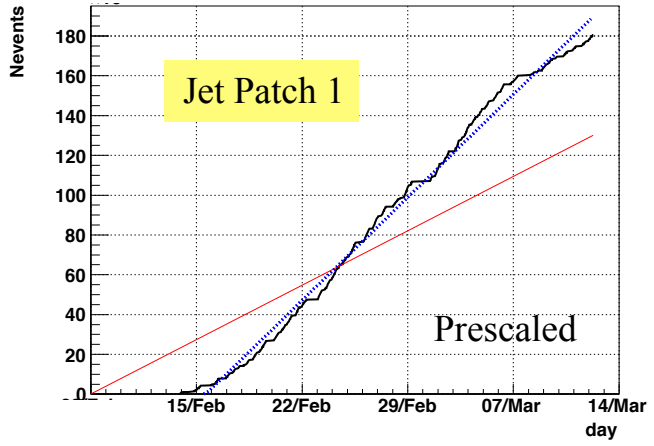












- STAR has **exceeded** in ~4 weeks its **luminosity goal**!

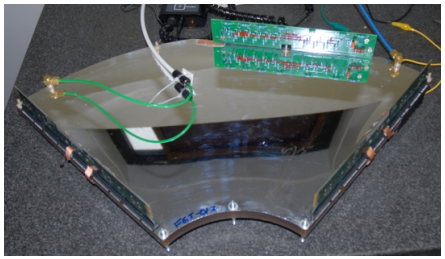
Red: Linear projection from t=0

Blue: Linear projection based on actual performance

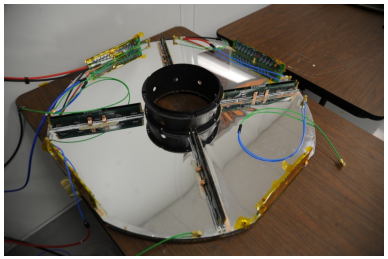
Black: Actual performance

Upgrades / News

Forward GEM Tracker - Layout

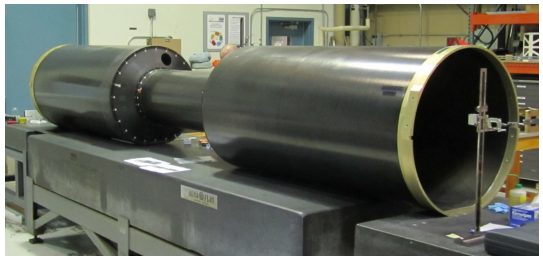


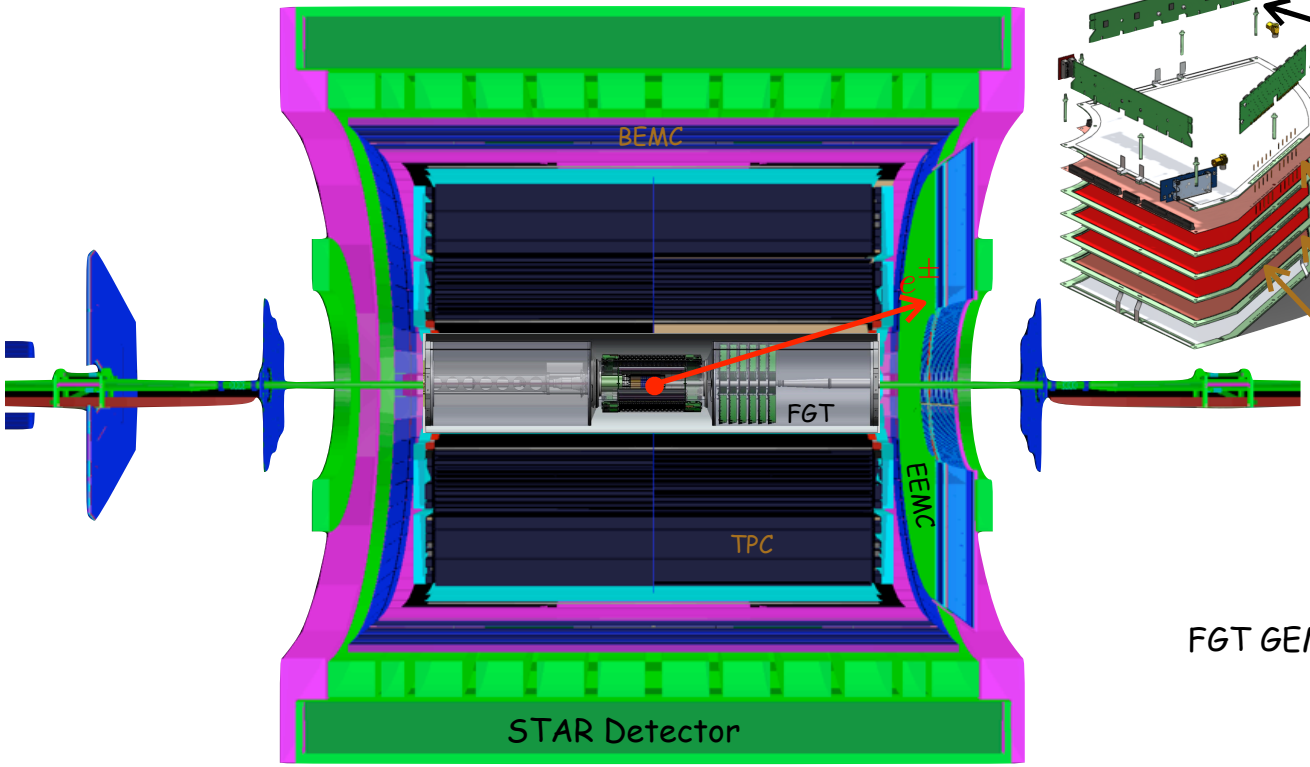
Quarter section

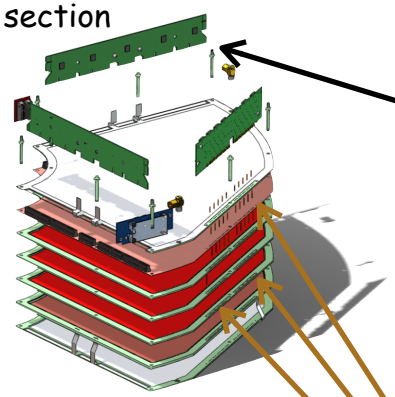


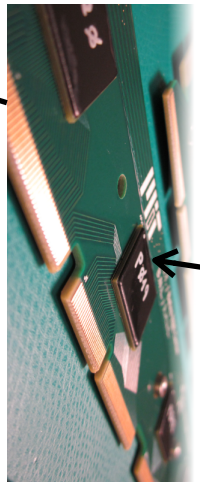
Disk

Quarter section









APV module

Packaged APV chip

FGT GEM foil

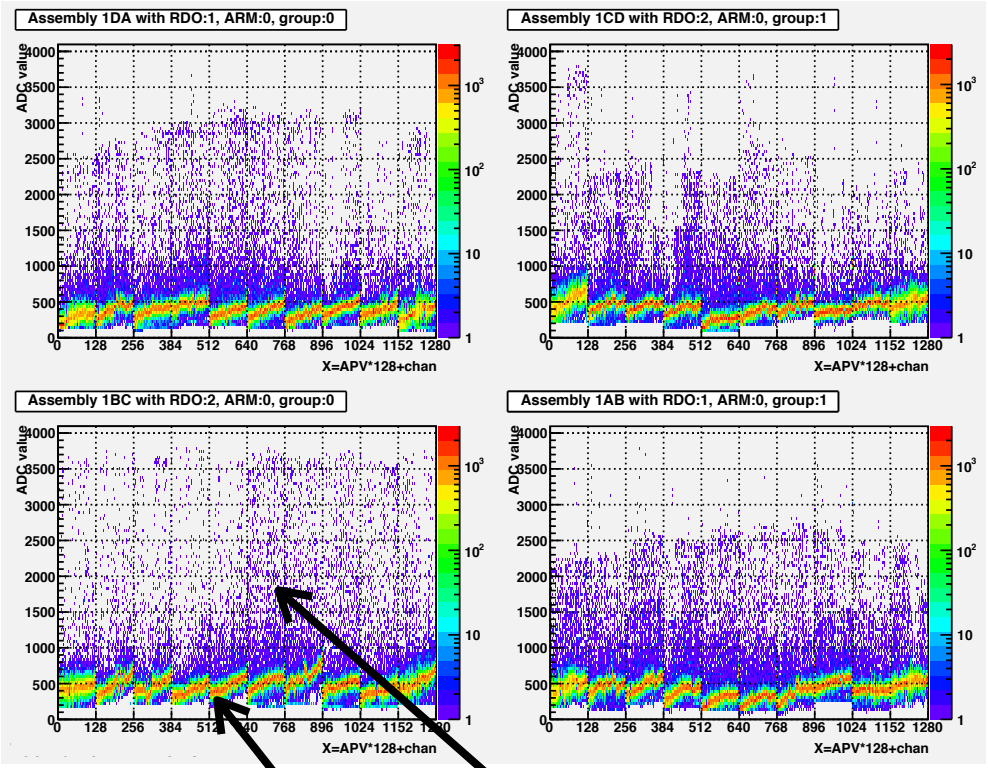
Upgrades / News

- Forward GEM Tracker - Commissioning Plan
  - ☑ Verify gas flow ($ArCO_2$) and HV operation without beam
  - ☑ Timing adjustment and APV chip parameter tuning
  - ☑ With overnight collisions and low background perform HV ramp to 3.6kV for all quarter sections
  - ☑ Study of working point (HV scan etc. / Further APV chip parameter tuning)
  - ☑ Goal: Complete commissioning during 200GeV operation based on EEMC HT trigger
  - ○ Goal: Participate in 500GeV data taking with L0/L2W trigger

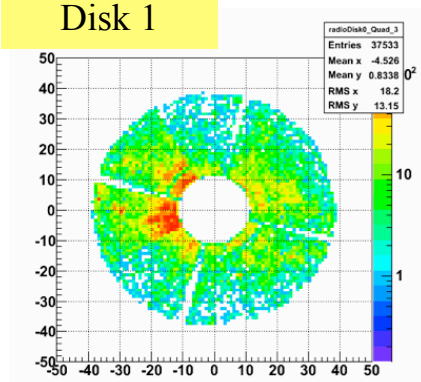
Upgrades / News

- Snapshot of FGT raw performance

Disk 1



Disk 1



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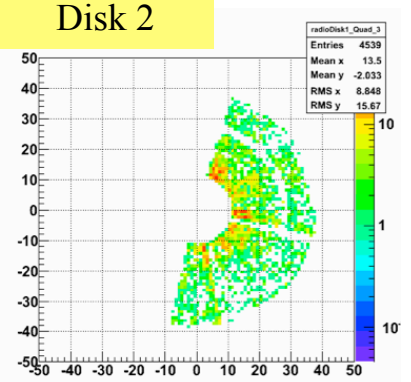

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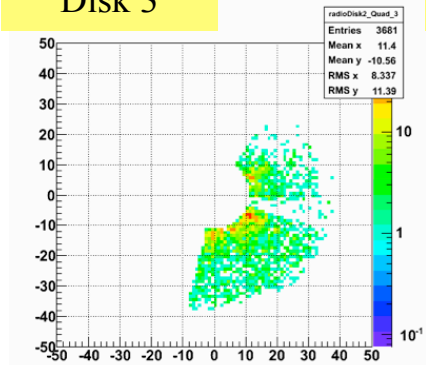

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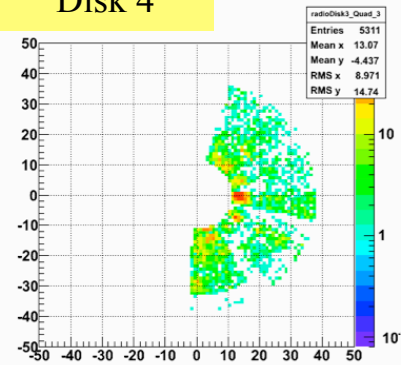

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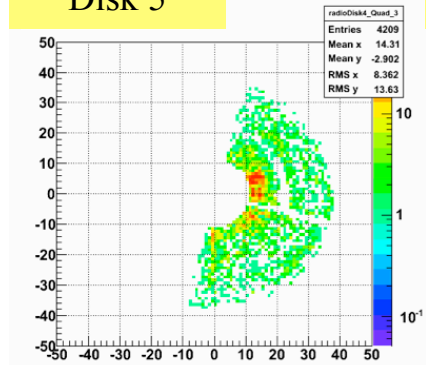
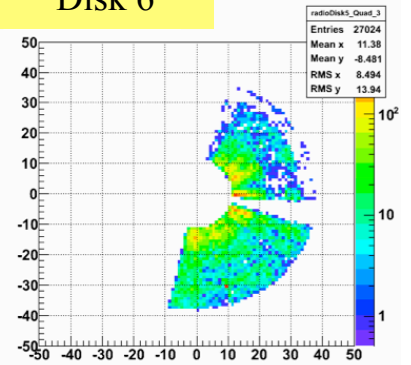


Disk 6

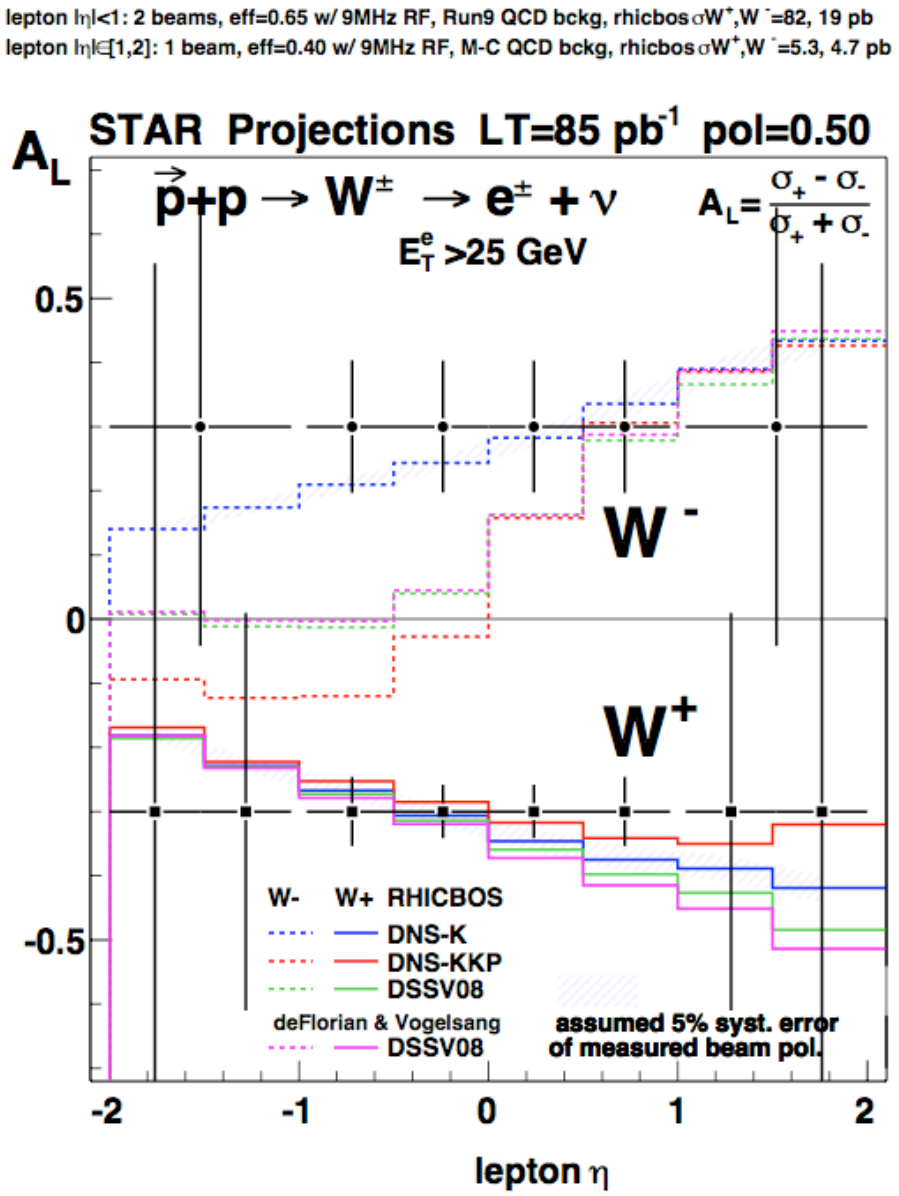


Longitudinal program

- Overview of selected topics
  - W A_L at mid-rapidity and forward rapidity (Depending on FGT commissioning progress!)
  - A_{LL} Jet production, in particular inclusive jet production
  - A_{LL} Hadron production

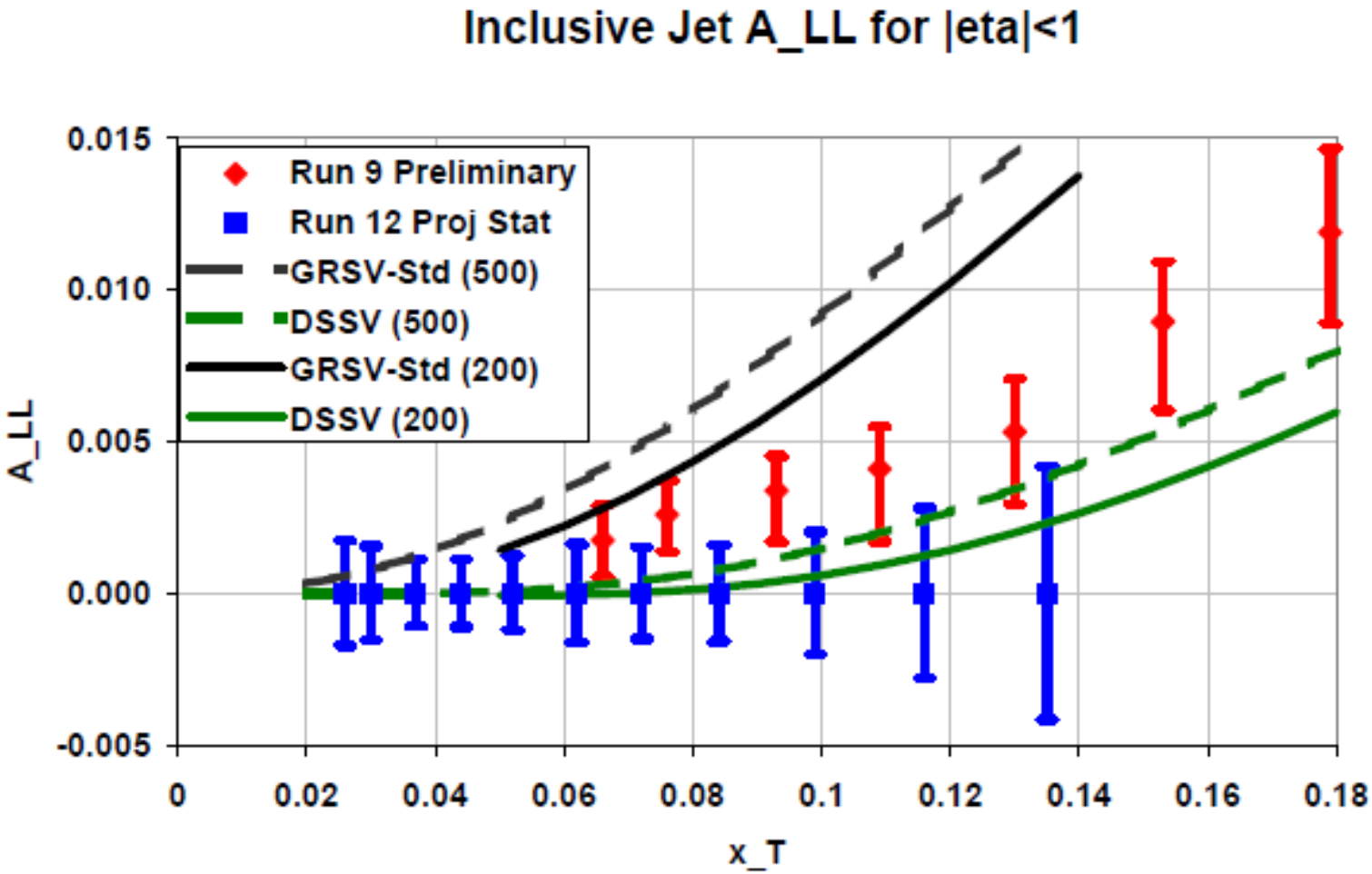
Longitudinal program

- W A_L / Run 12 projections
  - Crucial: Measurement of A_L as a function of lepton η
  - Mid-rapidity η: Improvement over first measurement
  - Forward / backward η: Proof-of-principle measurement, depending on FGT commissioning progress
  - Statistical error estimates shown are for 85pb^{-1} / 50% beam polarization (45pb^{-1} yield ~40% larger uncertainties), including limited FGT coverage



Longitudinal program

- Inclusive jet A_{LL} / Run 12 projections



- Statistical error estimates shown are for 75pb^{-1} / 50% beam polarization (45pb^{-1} yield ~30% larger uncertainties)

Summary

- Physics program
  - Rich 200GeV transverse program complementing 500GeV transverse program in 2011
  - Expectations for longitudinal program:

    P=0.5 and L=45pb^{-1}, i.e. P^{4}L = 2.8pb^{-1} and P^{2}L=11.3pb^{-1}
  - Crucial: Measurement of A_L as a function of lepton η
  - First measurement of A_{LL} at 500GeV for jet production (Lower x)
- New detector capabilities
  - Partial installation of FGT
  - Commissioning during initial 200GeV transverse running period completed on time
  - Goal: Participate in 500GeV data taking with L0/L2W trigger