



Brief STAR report
500GeV - Achievements
200GeV - Expectations

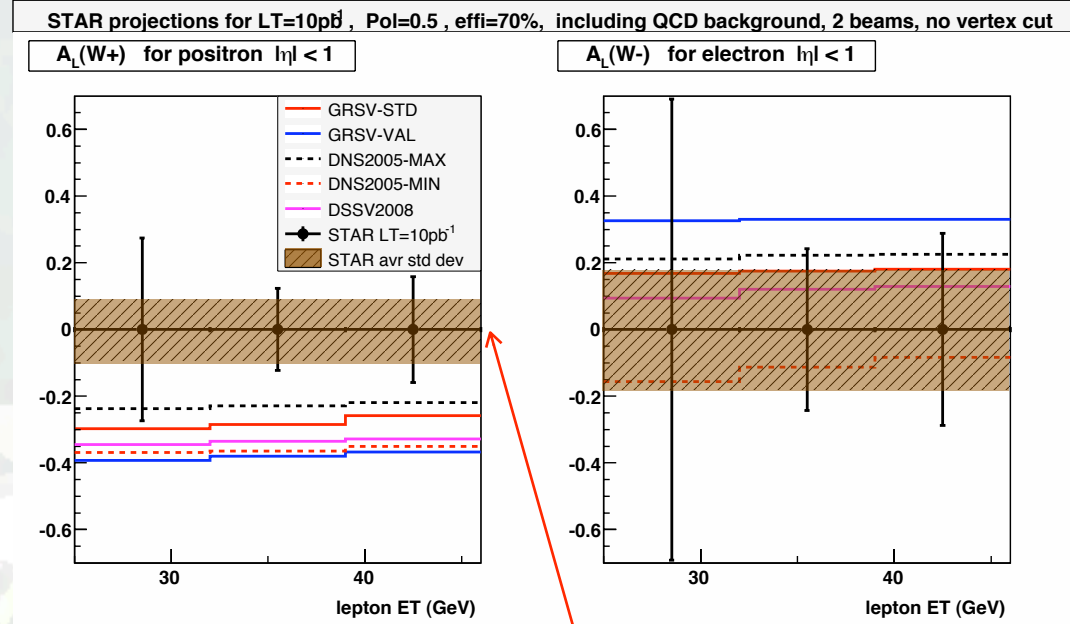
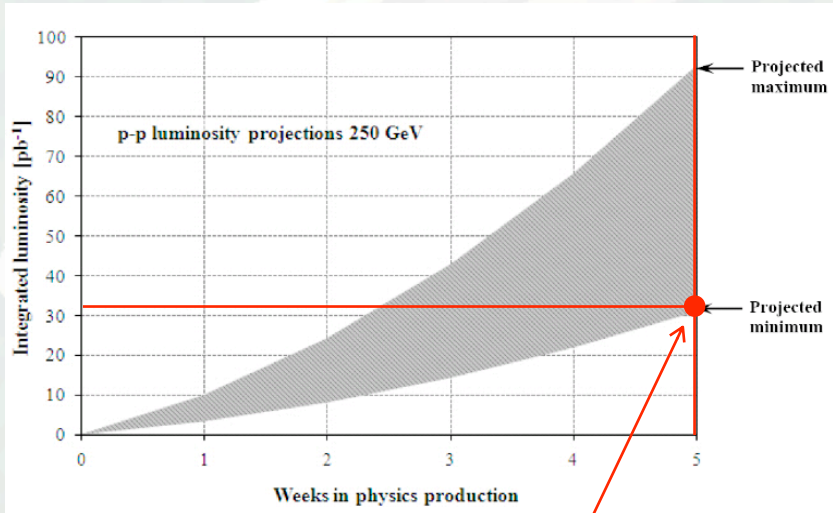
Bernd Surrus





STAR Run 9 500GeV program (W production)

Projected performance / assumptions - STAR 500GeV program



Assumed only minimum projection / Time needed in STAR for commissioning work: $\sim 10 \text{ pb}^{-1}$ (recorded)

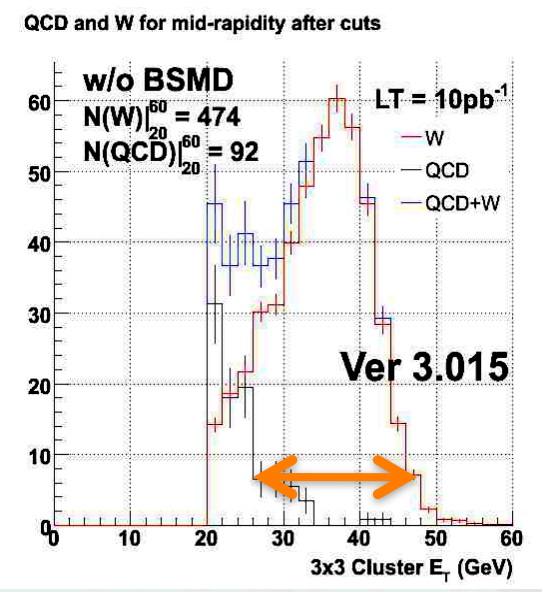
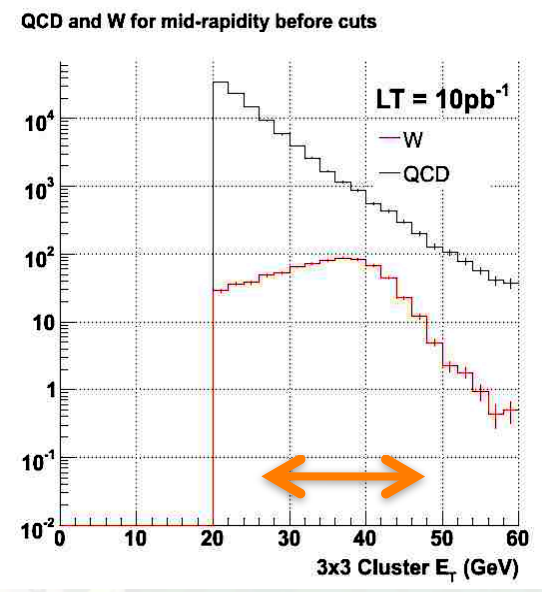
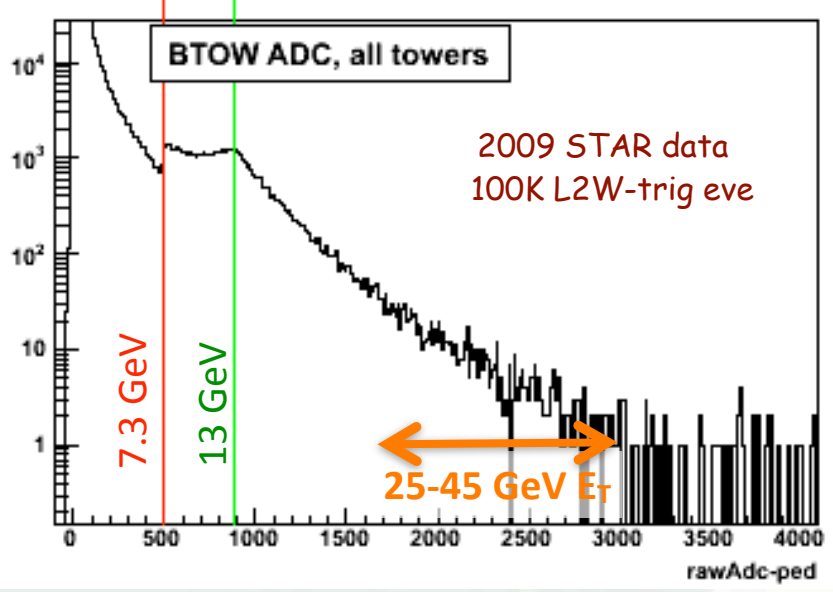
Assumption:
 $FOM = P^2 \cdot L \sim 2.5 \text{ pb}^{-1}$
 $P \sim 0.5 / L_{\text{delivered}} \sim 30 \text{ pb}^{-1}$
 $L_{\text{recorded}} \sim 10 \text{ pb}^{-1}$

- Primary goal: Develop local polarimetry in STAR at 500GeV (\Rightarrow ZDC) : DONE
- Physics Goal 1: First W measurement in STAR at mid-rapidity : Establish signal (Extensive full GEANT simulations completed of W signal and QCD background events - Feasibility demonstrated!) a) Jacobian peak b) Cross section
- Physics Goal 2: First A_L W measurement (W^+)
- Other opportunities: Jets / Di-Jets at low x



Run 9 - 500GeV period - Status

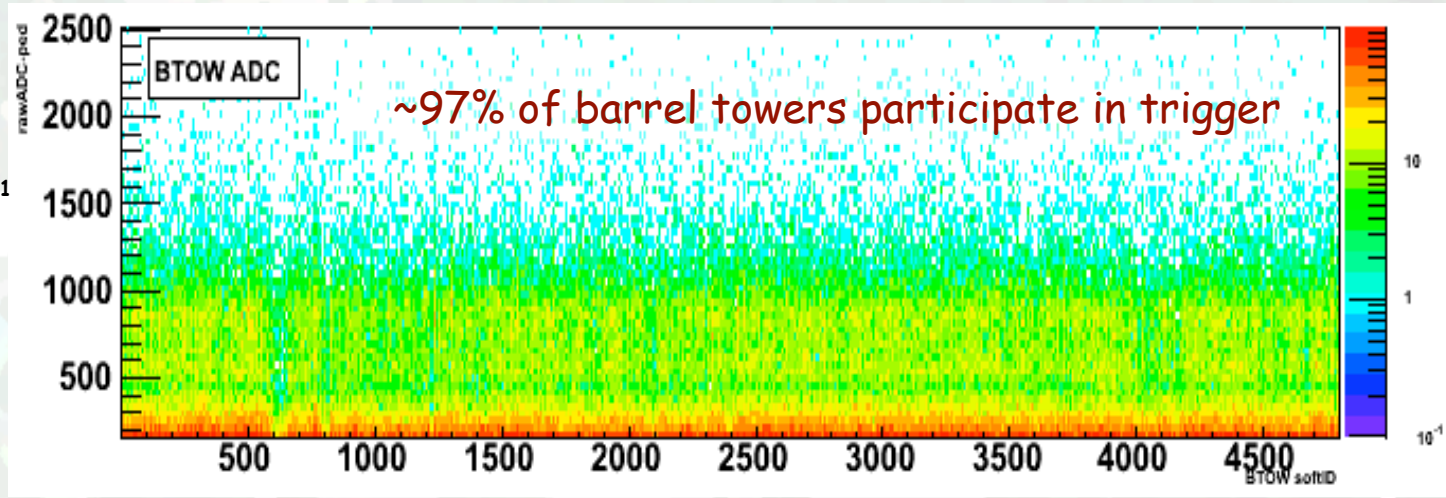
Run 9 500 GeV Status - W Trigger



W-trigger: $HT > 7.3\text{ GeV}$ ET &
 L2: $2 \times 2 > 13\text{ GeV}$, 2-3Hz
 Acquired since March 19
 (longitudinal pol. @STAR) $\sim 10.7\text{pb}^{-1}$

- ~ 103.3 hours of STAR DAQ up time w/ W-trigger
- $\sim 953\text{K}$ W-trigger events

All events processed to muDst w/
 crude TPC calibration

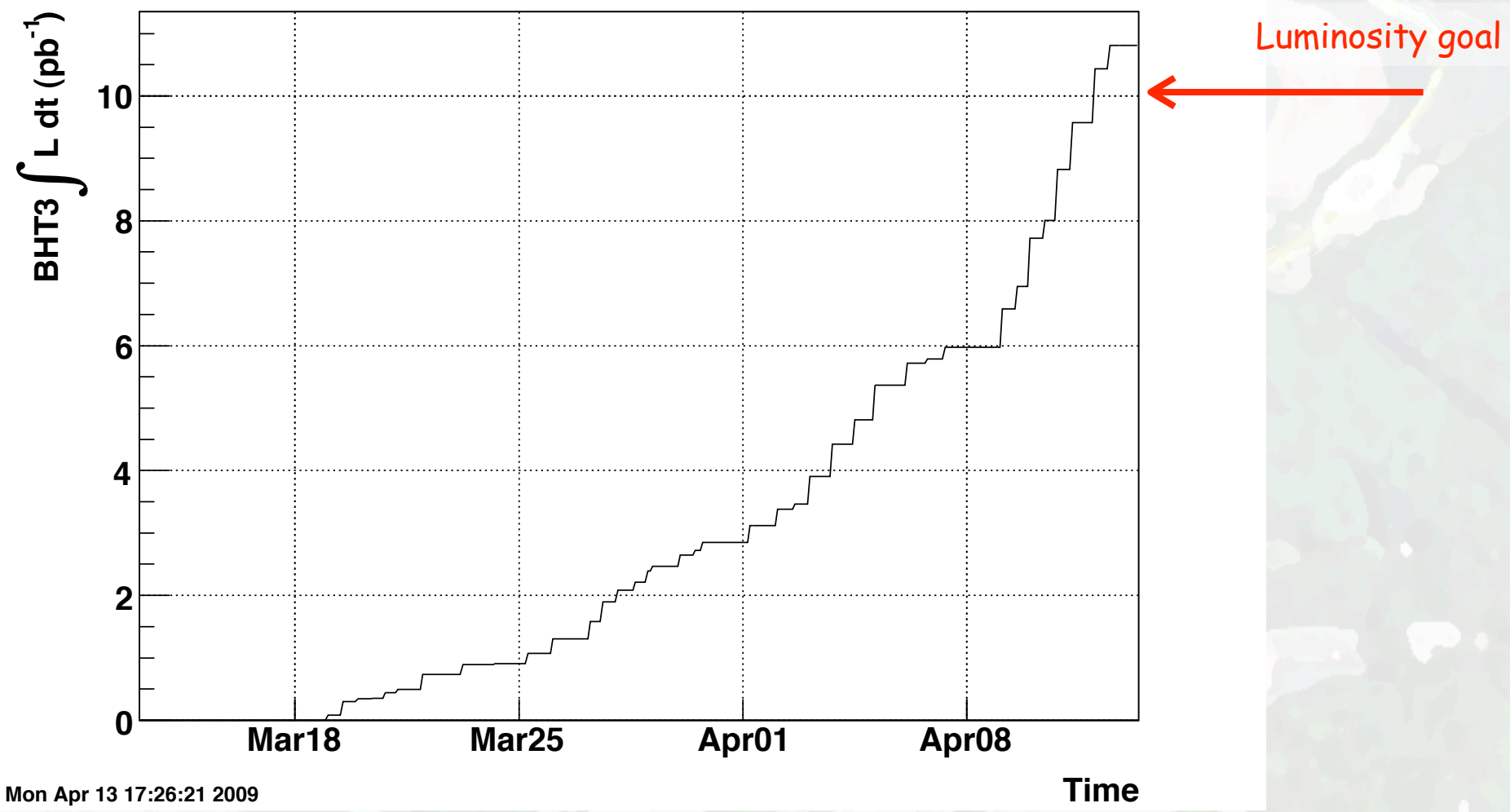




Run 9 - 500GeV period - Status

- Integrated luminosity: W trigger

2009 STAR 500 GeV pp LongPol BHT3 Recorded Luminosity

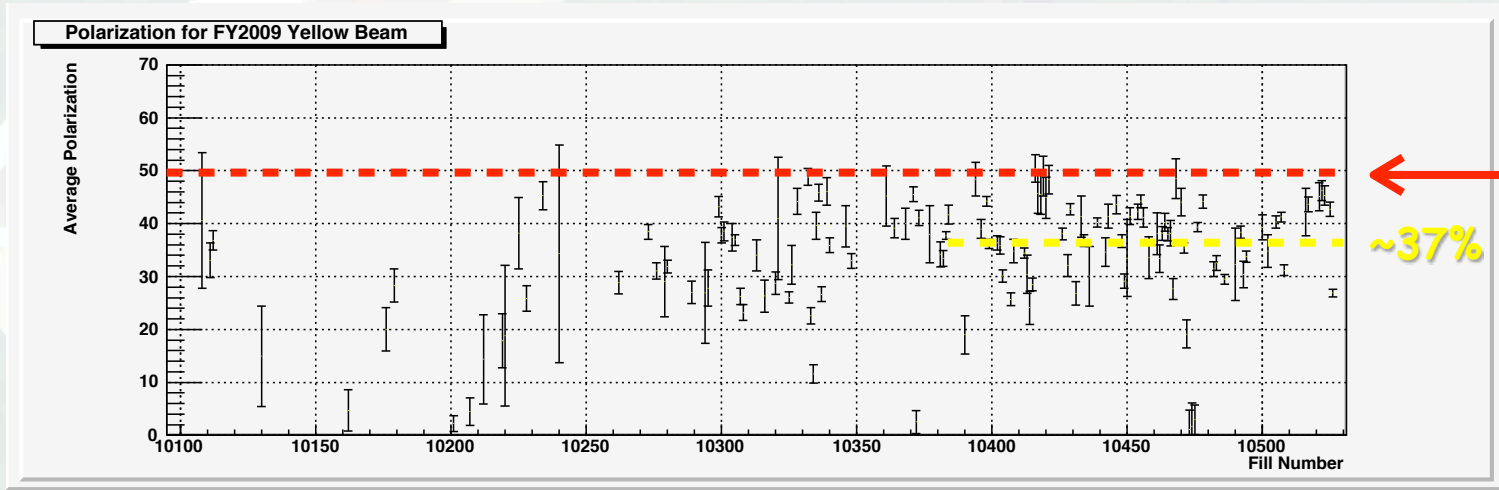


Mon Apr 13 17:26:21 2009

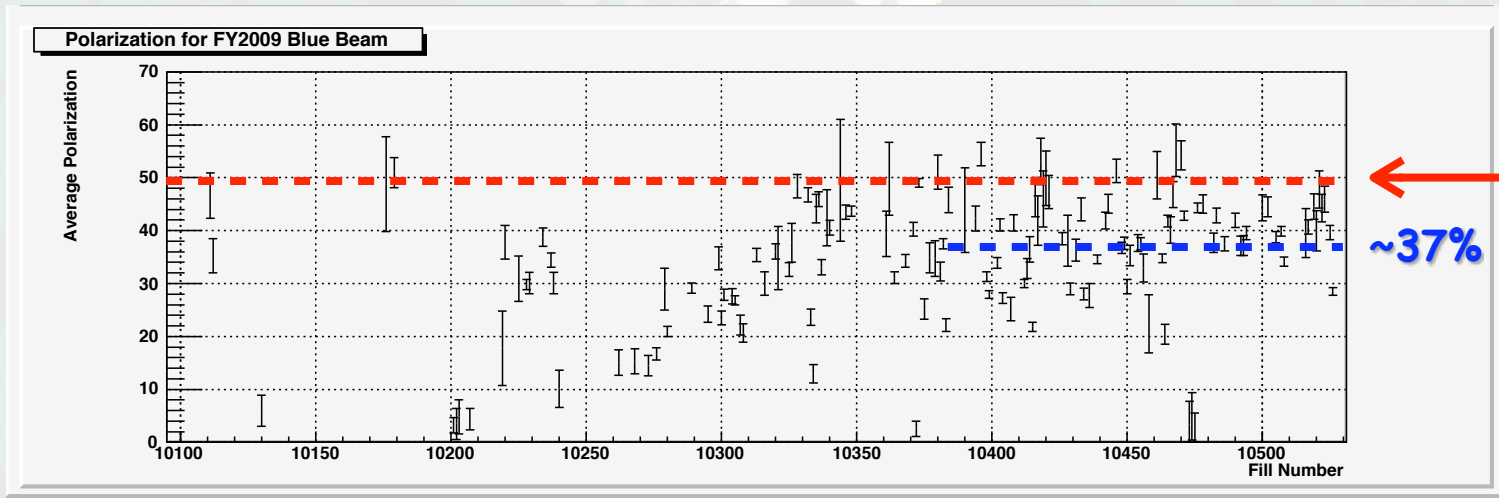


Run 9 - 500GeV period - Status

□ Polarization



← Polarization goal
~37%



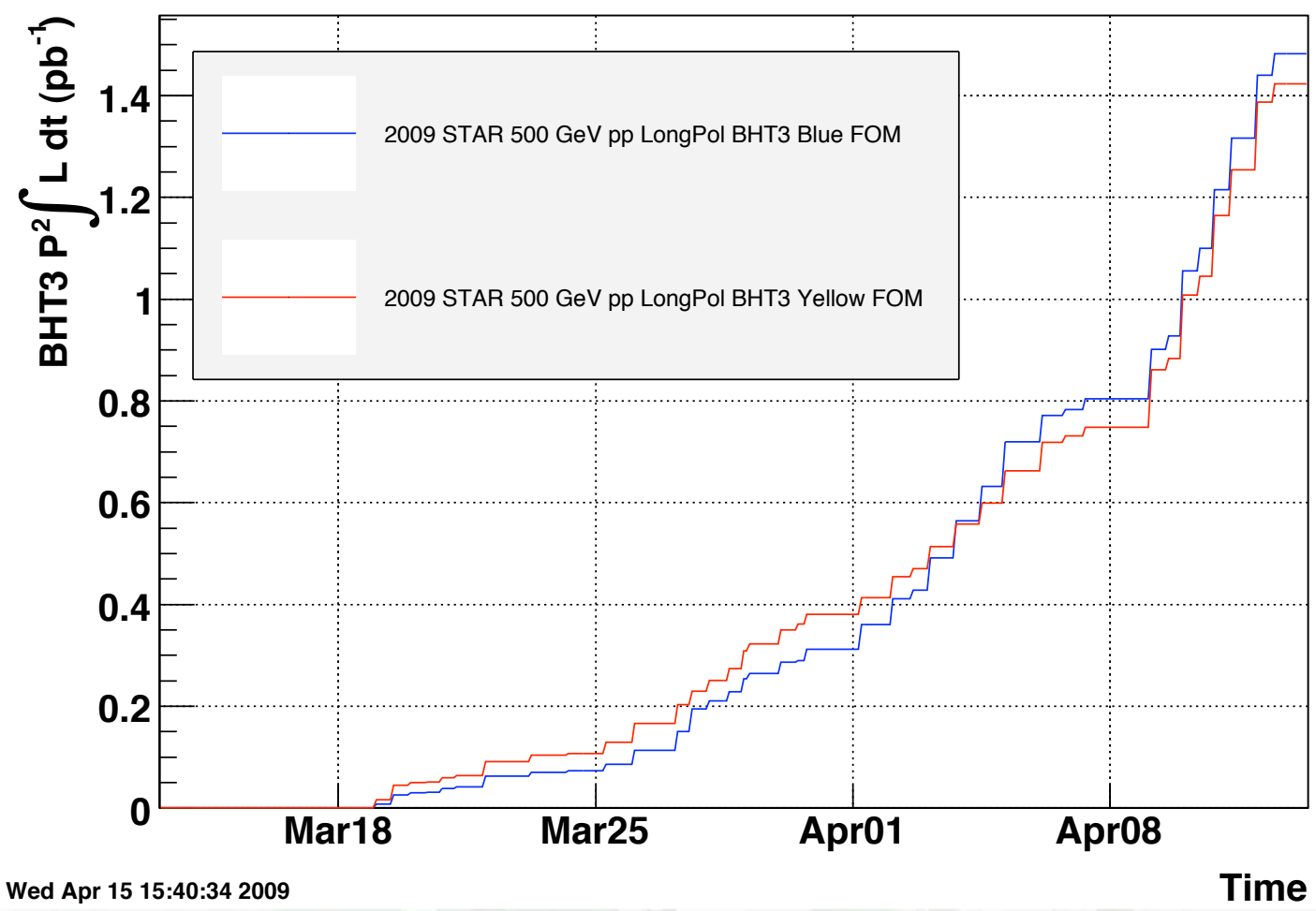
← Polarization goal
~37%



Run 9 - 500GeV period - Status

□ FOM

2009 STAR 500 GeV pp LongPol BHT3 Blue FOM



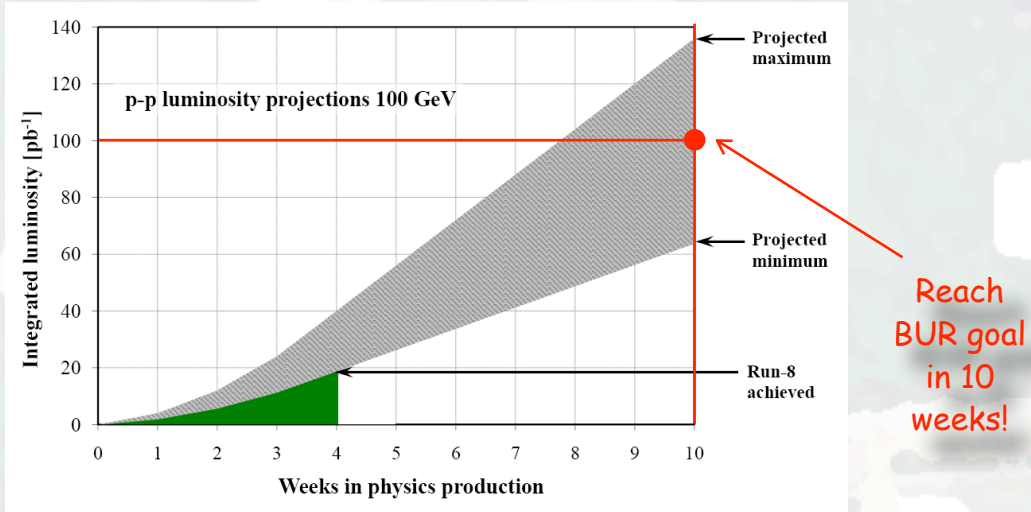
60% of FOM goal (2.5pb⁻¹)

Wed Apr 15 15:40:34 2009

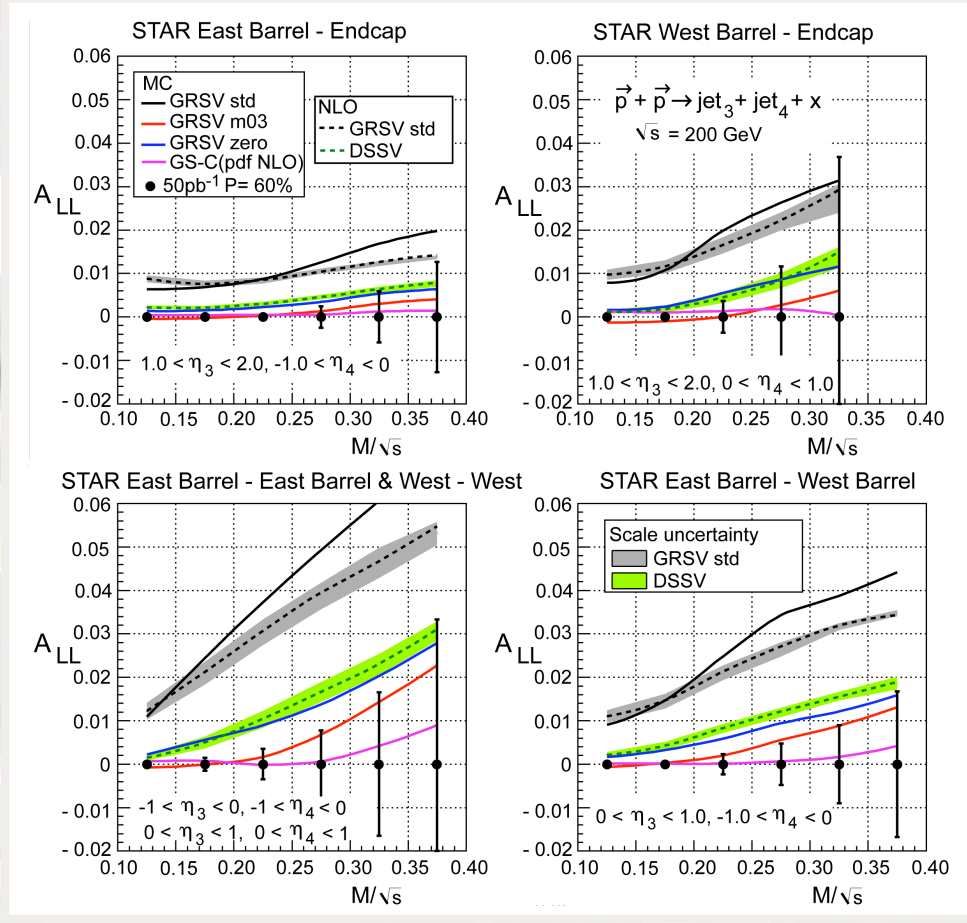


STAR Run 9 200GeV program (Gluon polarization)

Projected performance / assumptions - STAR 200GeV program



- Precision inclusive measurements, in particular inclusive jet production
- Di-Jet production - Probe x dependence of $\Delta g(x)$
- Substantial improvement of gluon polarization reflected in highest PAC recommendation!



Assumption: FOM = $P^4 \cdot L \sim 6.5 \text{ pb}^{-1}$
 $P \sim 0.6 / L_{\text{delivered}} \sim 100 \text{ pb}^{-1} L_{\text{recorded}} \sim 50 \text{ pb}^{-1}$