AGS pp Status

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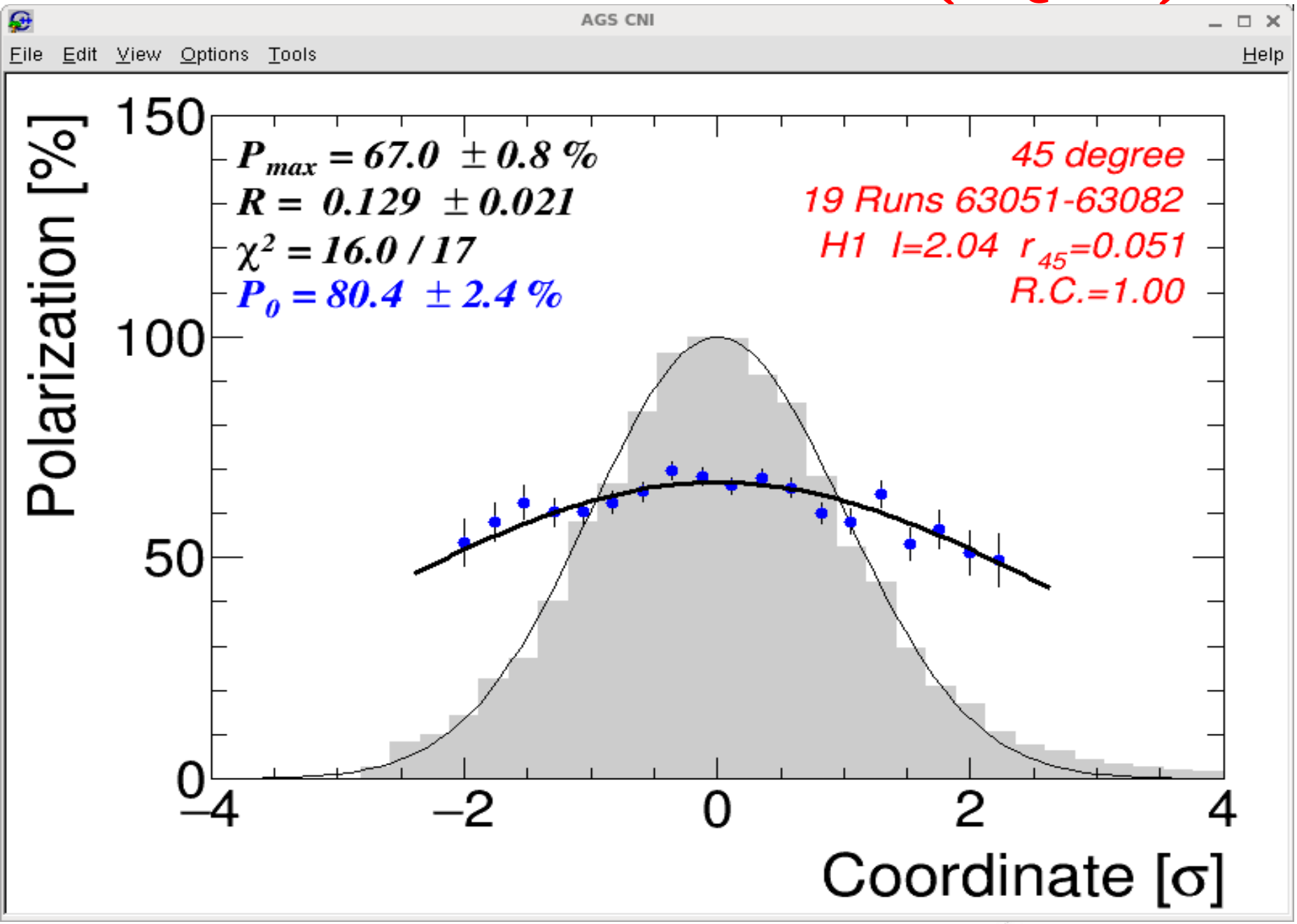
Time Meeting

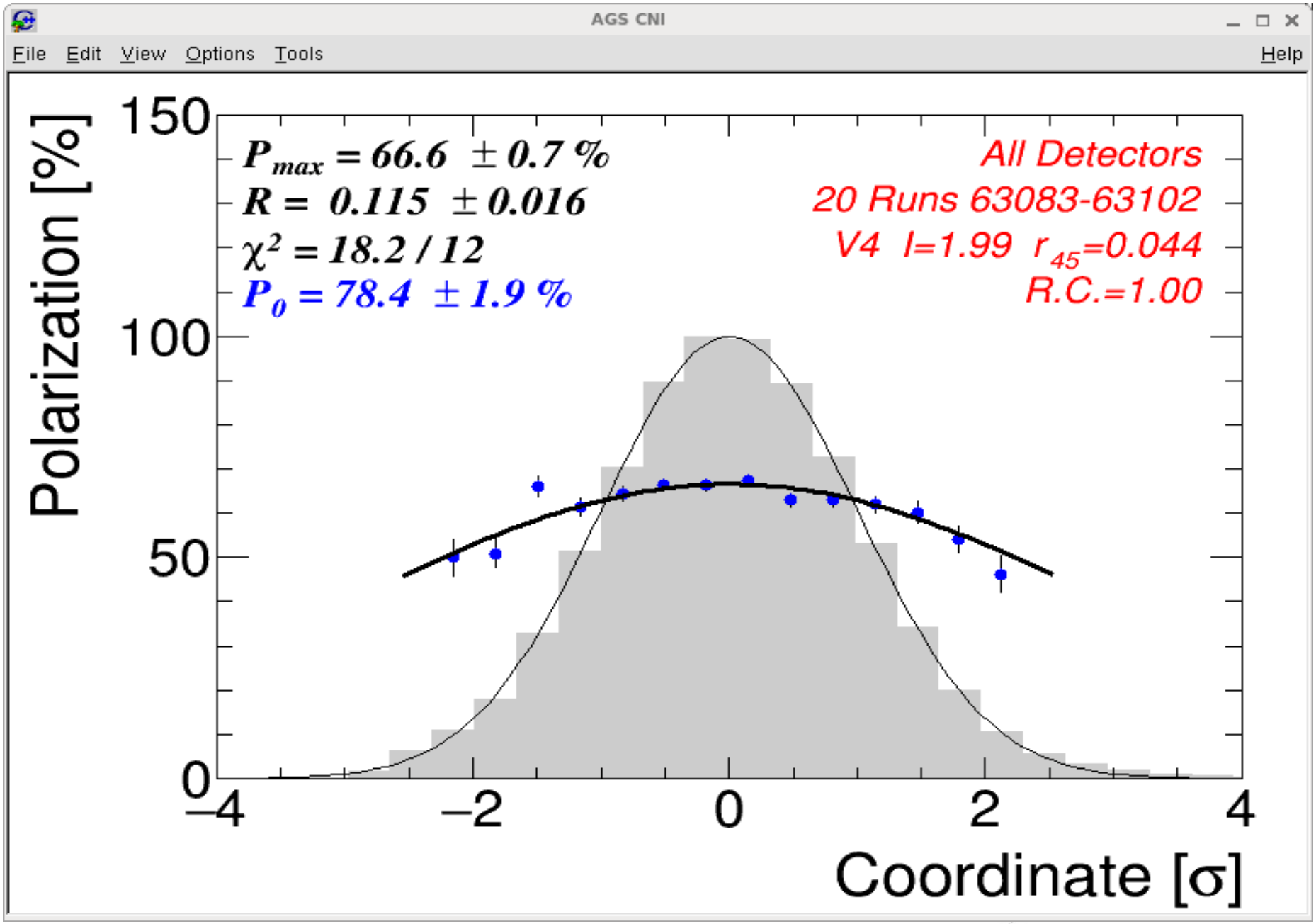
Status

- The intensity for RHIC fill is increased modestly, from 1.4* 10^{11} to 1.65*10^{11}. No visible increase in vertical emittance is seen.
- A faster Booster cycle has been developed. The aim is to improve emittance. So far we did not see that. Polarization in the AGS is similar to the regular ramp.
- Gas leak for horizontal eIPM is available since Friday.
- We took polarization profile measurements with JQ off to compare with JQ on.
- The APEX session of Au beam aperture study has been postponed. No need of EBIS beam this week.

Vertical Polarization Profile (JQ off)



Horizontal Polarization Profile (JQ off)



AGS Polarization Profile at Flattop

$$P^V_{max} = \frac{P_0}{(1+R_V)\sqrt{1+R_H}}$$

$$P^H_{max} = \frac{P_0}{(1+R_H)\sqrt{1+R_V}}$$

$$P_0 = \sqrt{P^V_{max} P^H_{max}}(1+R_V)^{\frac{3}{4}}(1+R_H)^{\frac{3}{4}}$$

P_0 is the polarization with zero emittance or source polarization. P^v_{max} equivalent to fixed target measurement done with vertical target.

Condition	P^V_{max}		R_H		P^H_{max}		R_V		P_{0_mea}		P_{200MeV} -> P_0	
JQ on	72.6	0.6	0.057	0.014	69.6	0.8	0.102	0.018	79.7	1.4	82.0	80.3
JQ off	66.6	0.7	0.115	0.016	67.0	0.8	0.129	0.021	79.4	1.5	82.2	80.5

The measured and expected P_0 agreement is reasonable.
The gain of polarization is mainly from the reduction of horizontal polarization profile (R_H) .