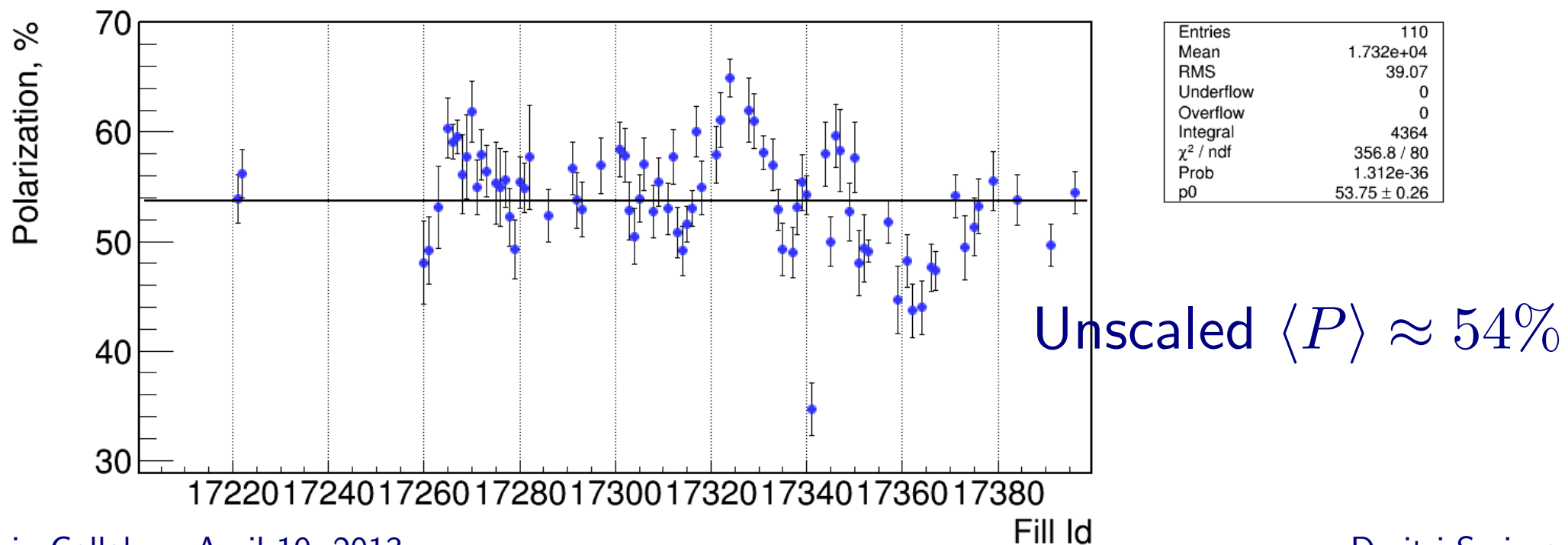
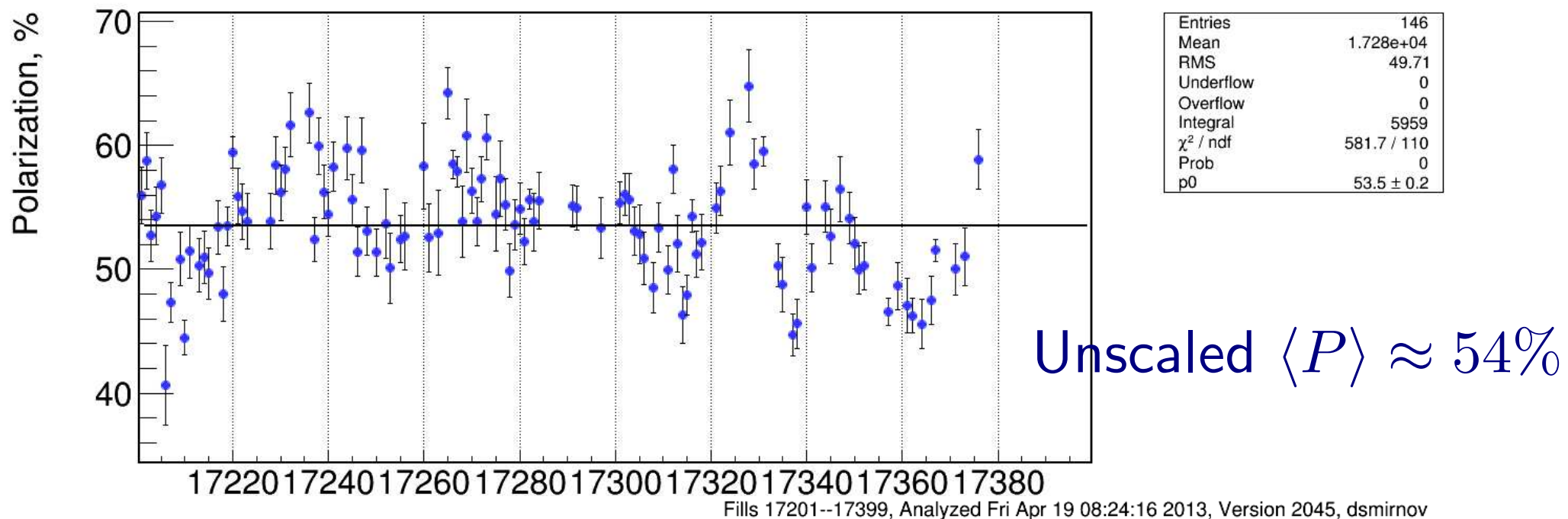


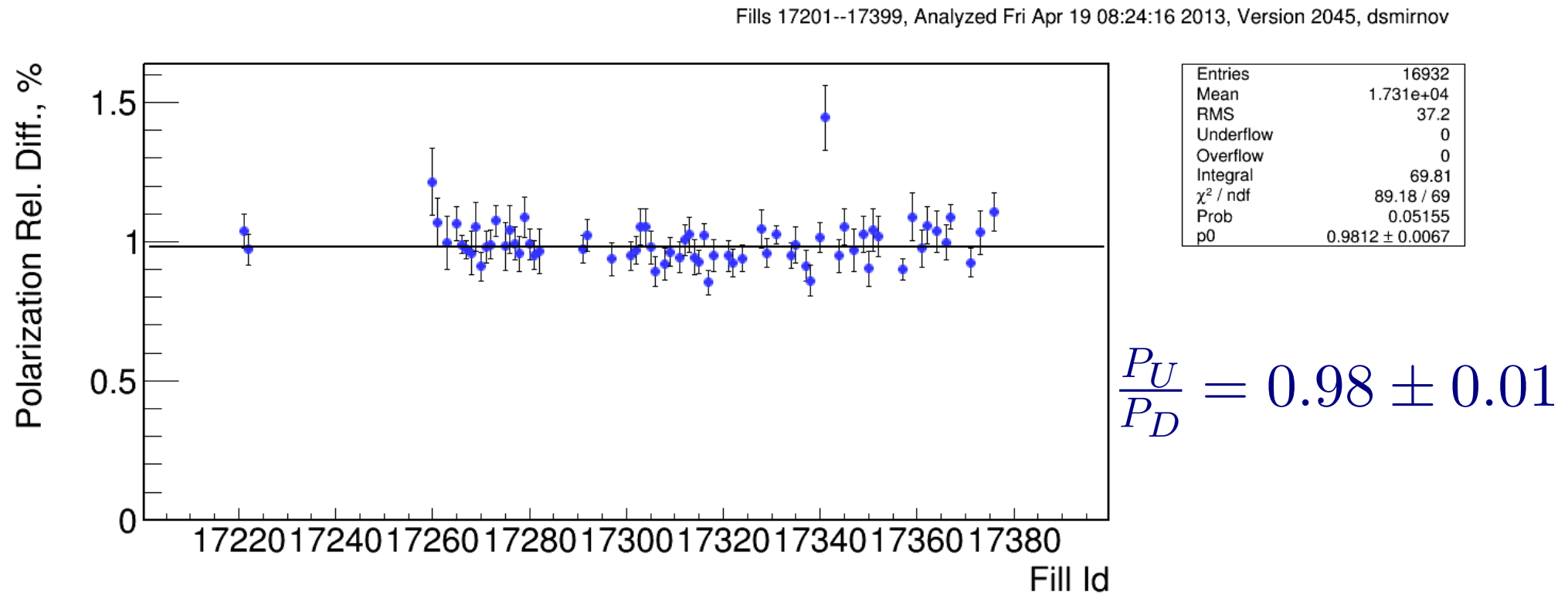
p-Carbon RHIC Polarimeters Status Report

Dmitri Smirnov
for the CNI polarimetry group

April 19, 2013

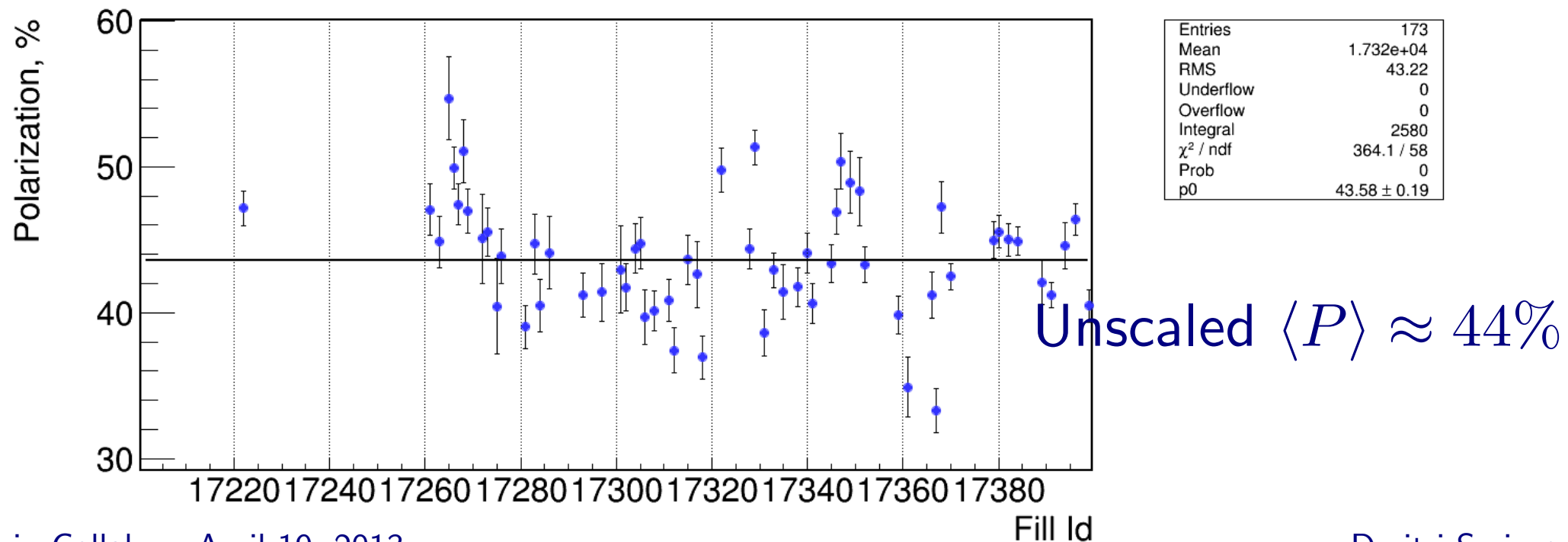
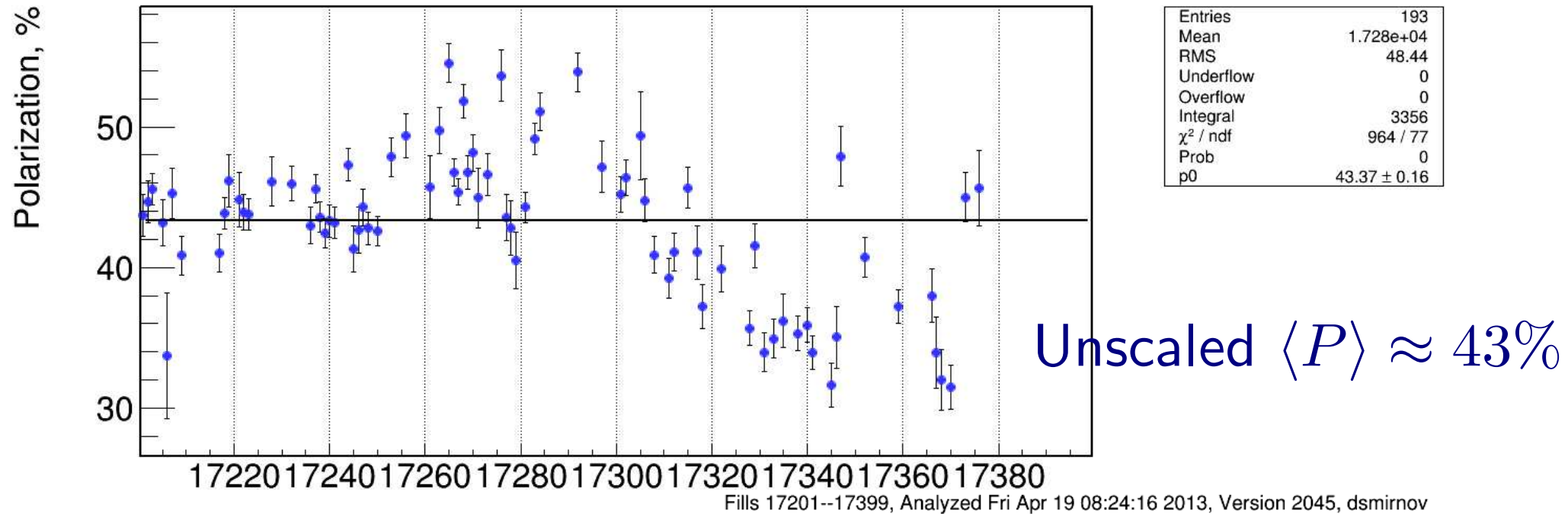
Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov

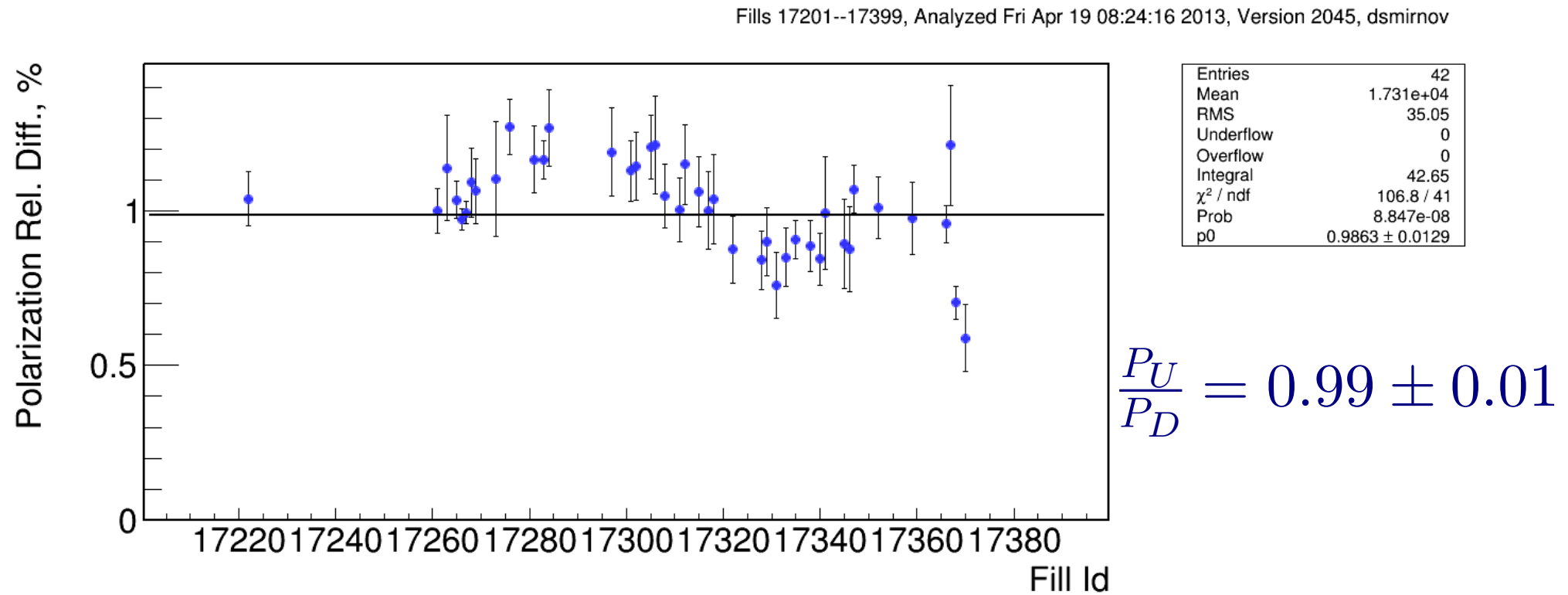




- Both polarimeters agree very well at injection

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov

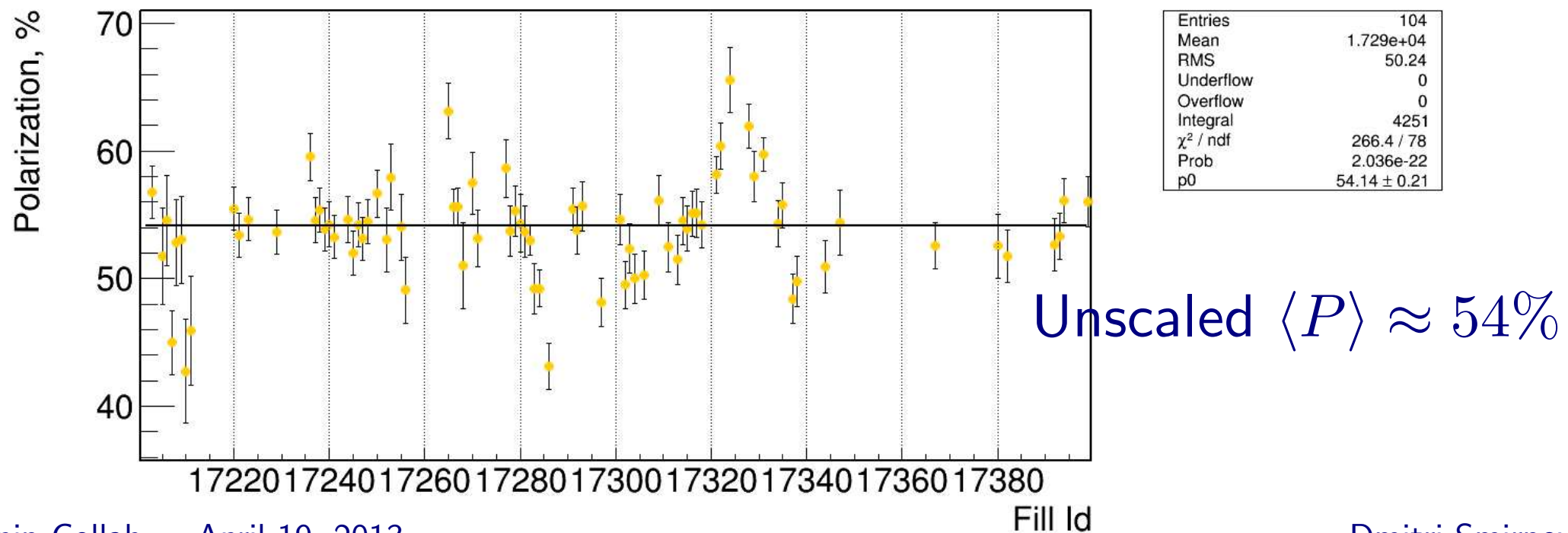
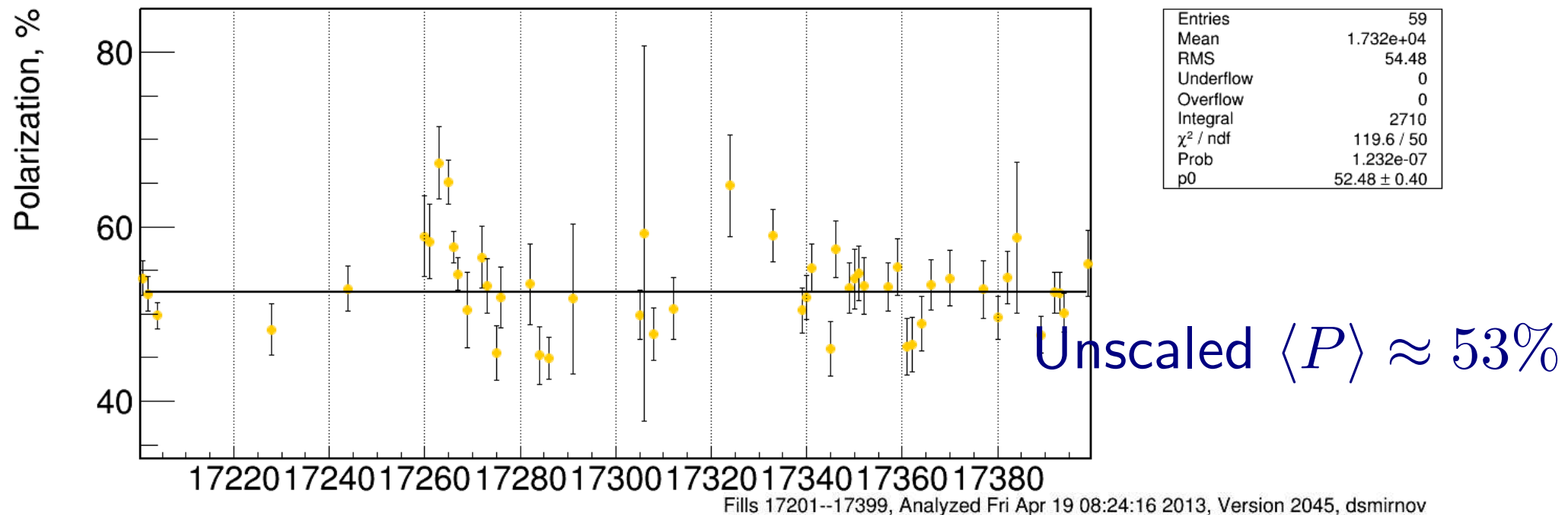


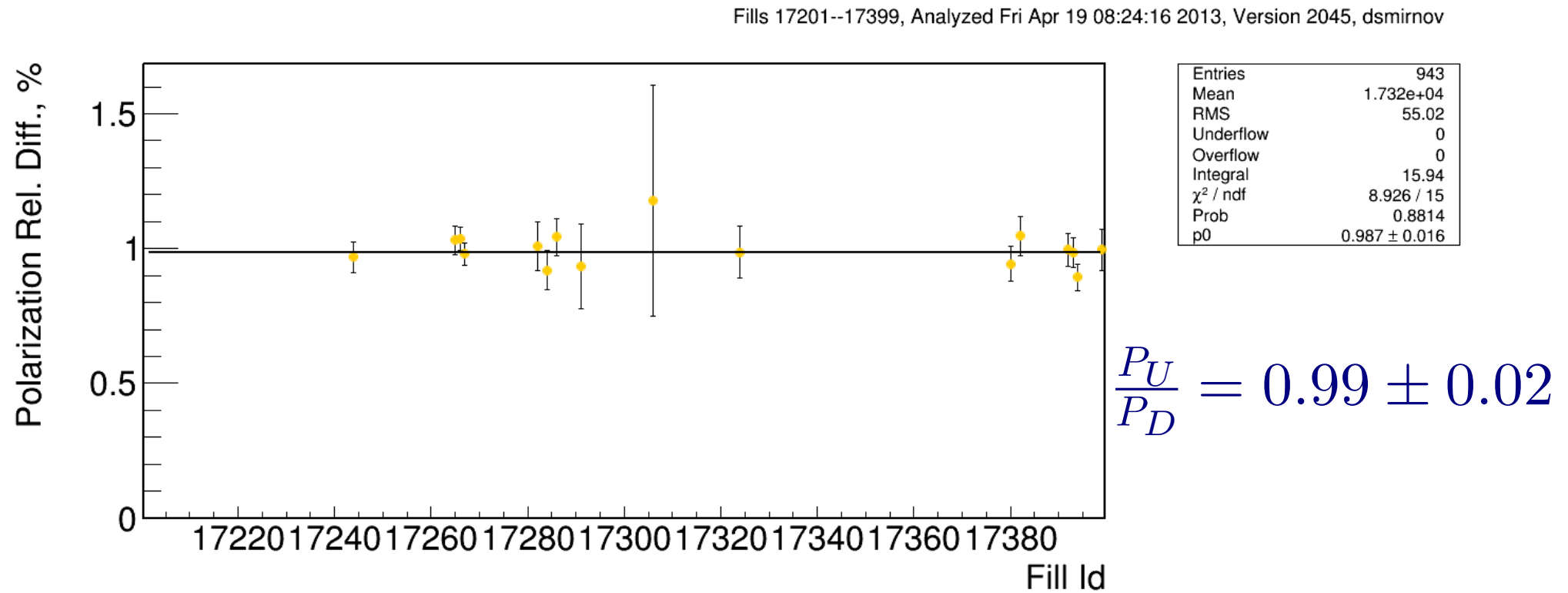


- B1 and B2 do not agree well at flattop energies
 - Do not observe obvious noise problems in the detectors
 - Targets are same as at injection . . .
 - Investigating changing detector gains . . .

pC Polarimeters in Yellow, Injection $E_{\text{beam}} = 24 \text{ GeV}$

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov

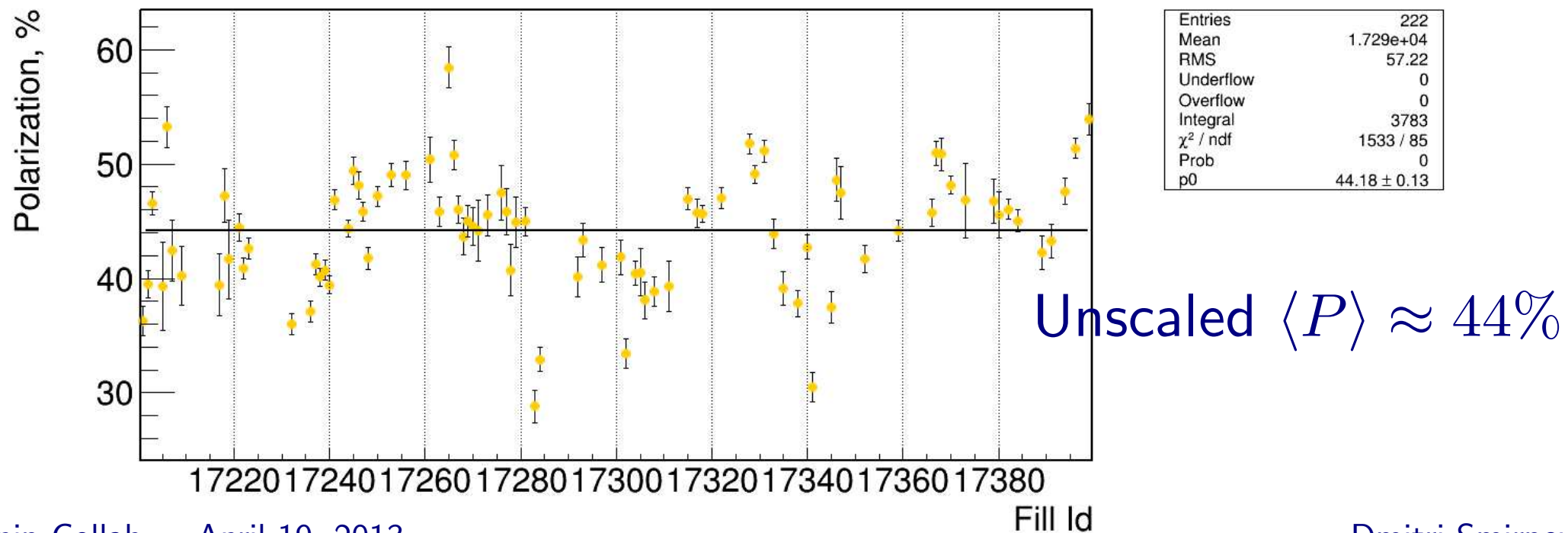
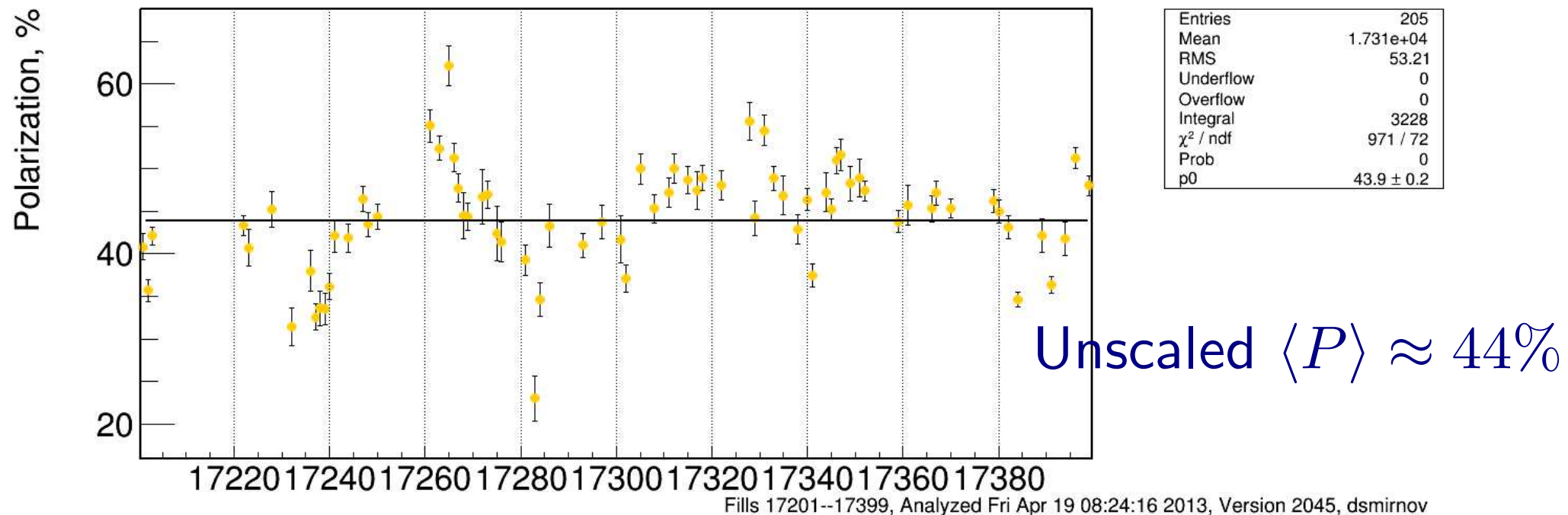


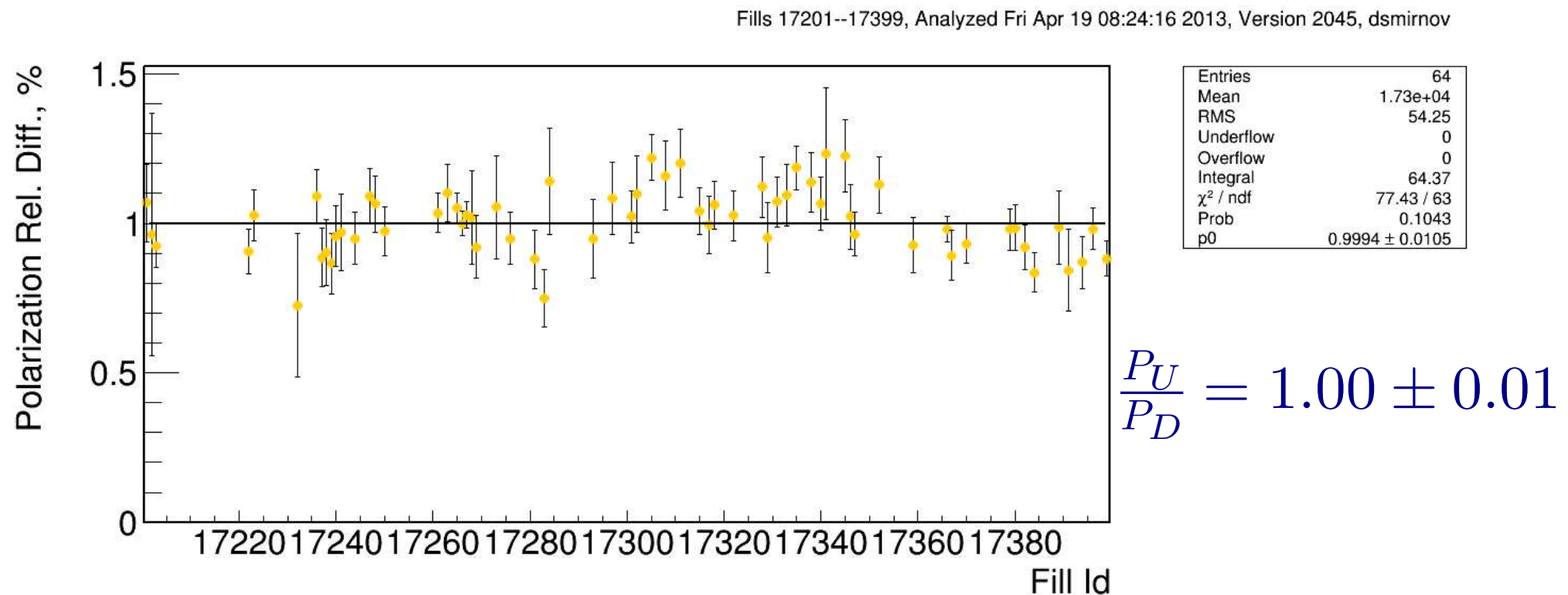


- Both polarimeters agree well at injection

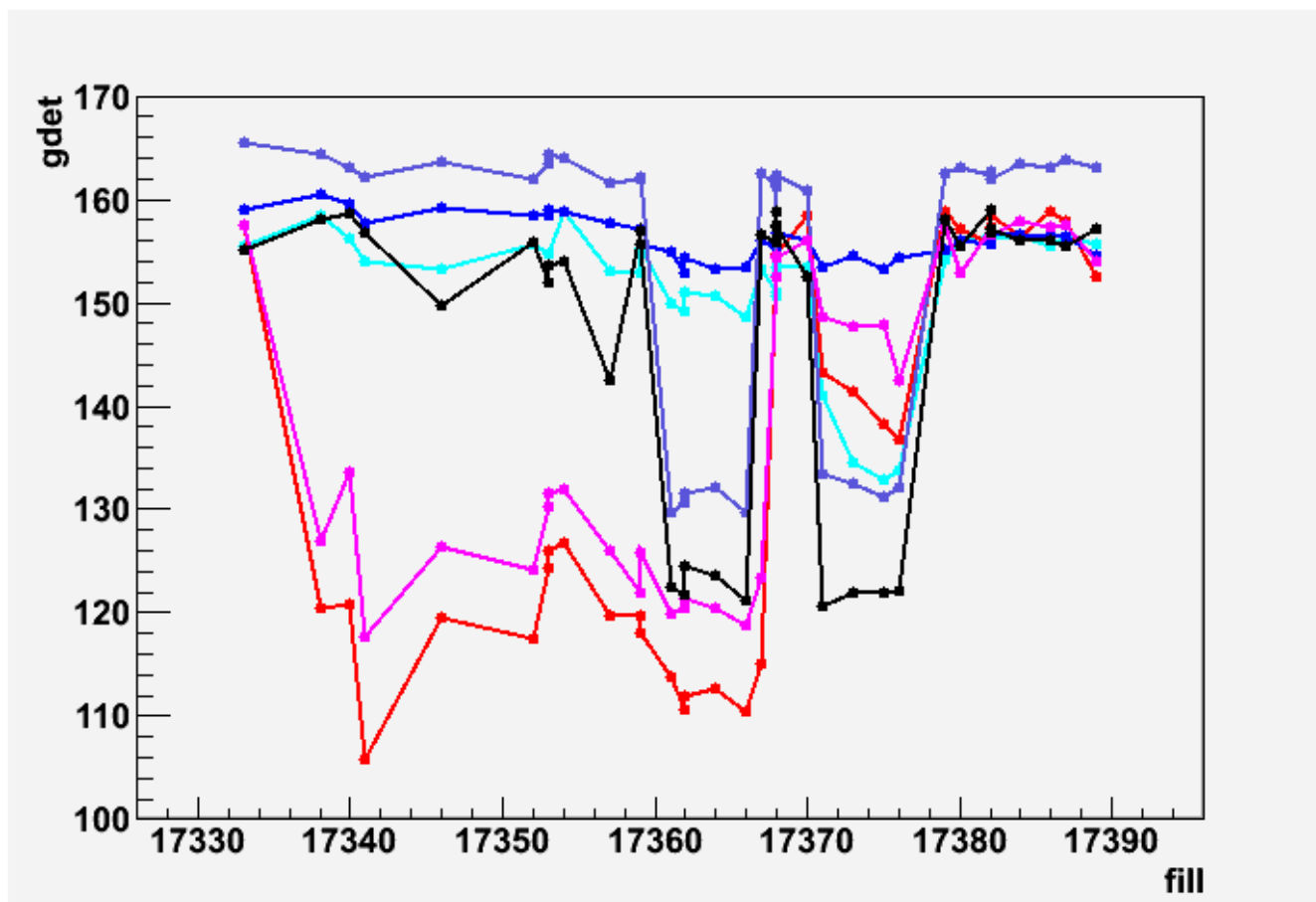
pC Polarimeters in Yellow, Flattop $E_{\text{beam}} = 255 \text{ GeV}$ 8 of 17

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov



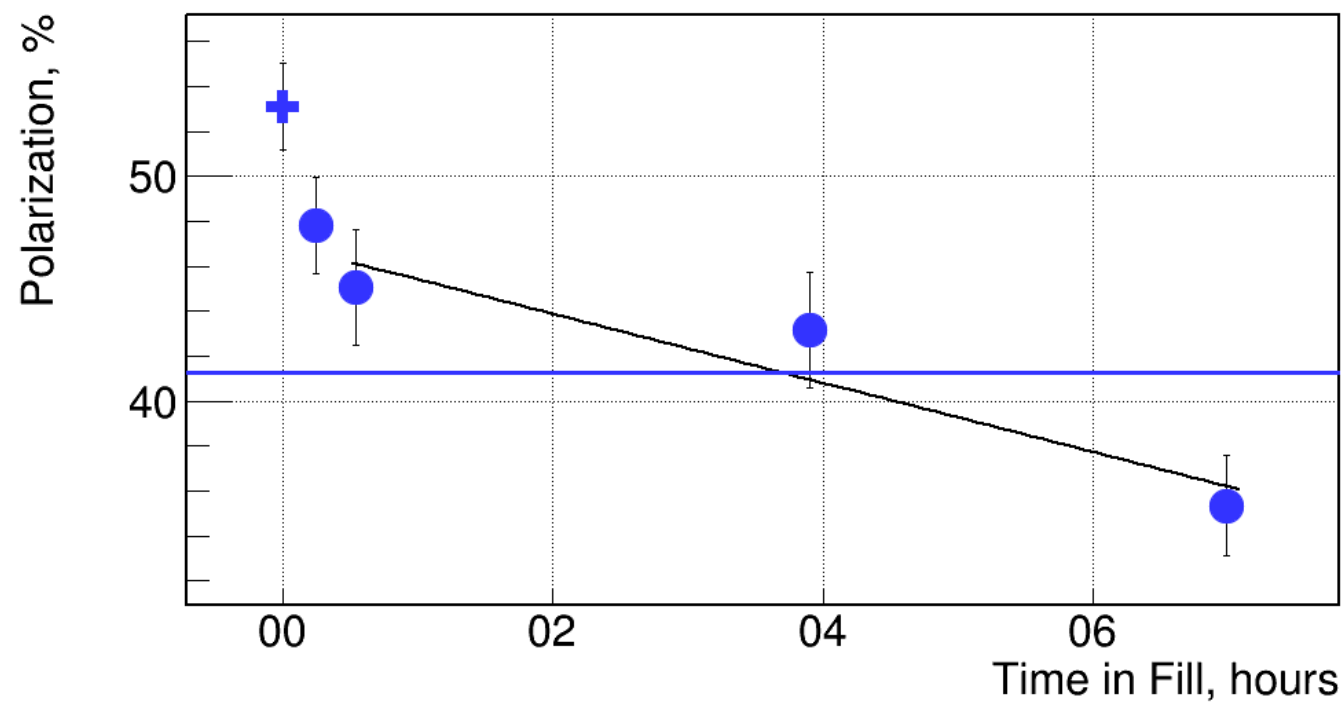


- Both polarimeters agree well on average
- Y1 and Y2 track each other very well at both injection and flattop



- New this year: Changing gains in some detectors
- Automatically take α calibration runs after each fill
- Investigating dependance of detector gain on leakage current

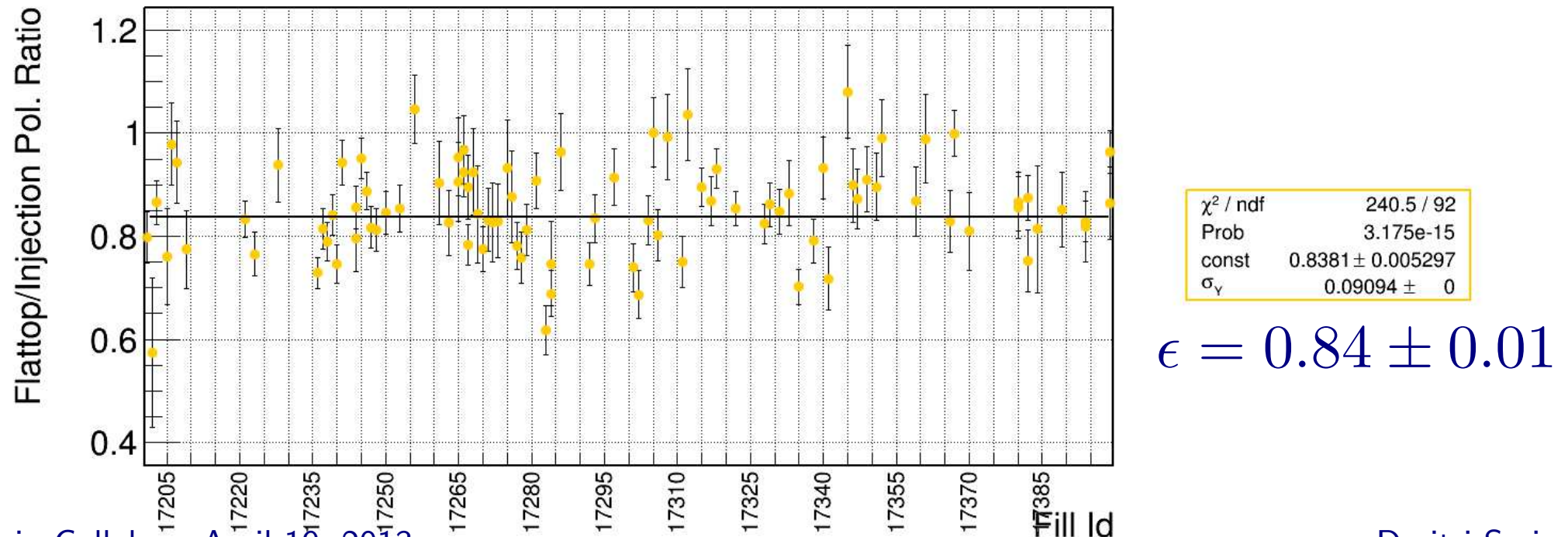
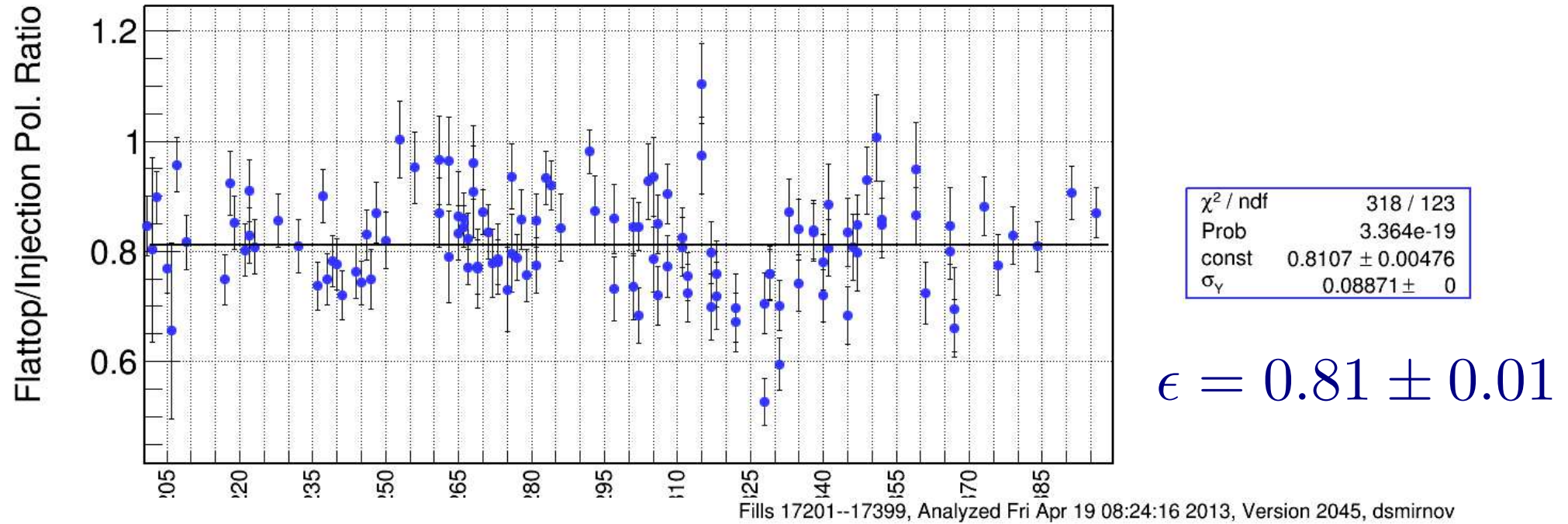
Fill 17248, Analyzed Fri Apr 5 08:42:36 2013, Version 2023M, dsmirnov



χ^2 / ndf	1.059 / 1
Prob	0.3033
$P_0, \%$	46.18 ± 2.383
Decay, %/h	-1.535 ± 0.5278

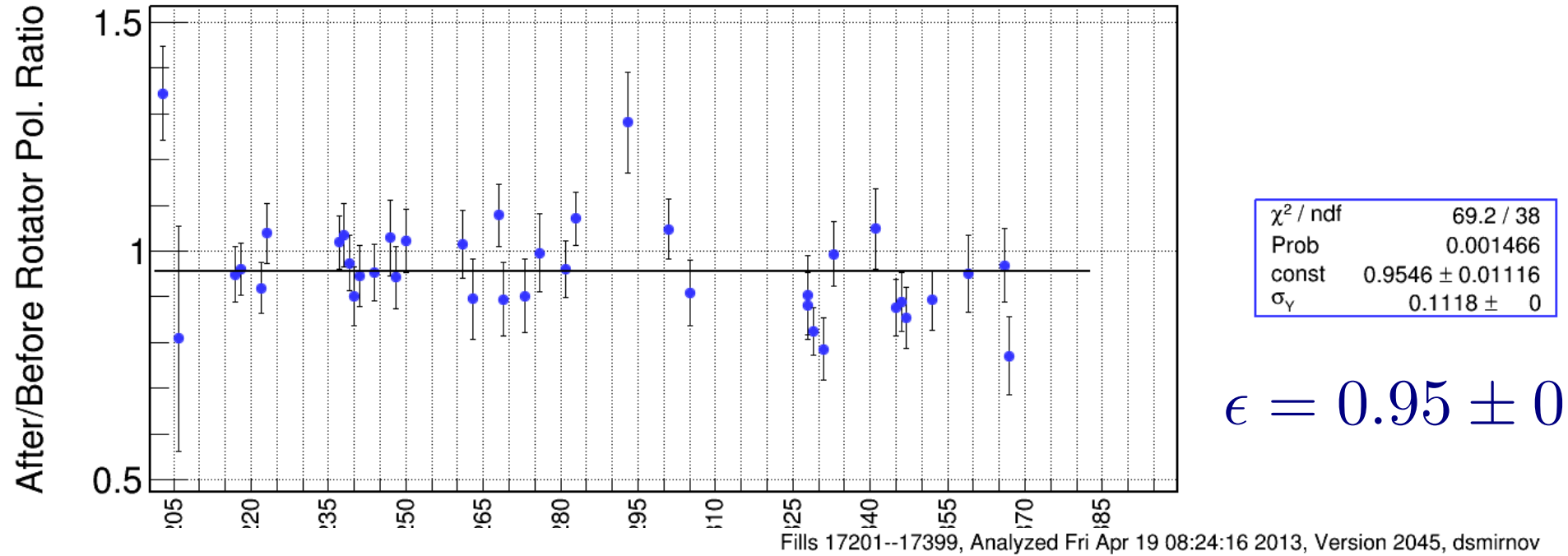
Energy Ramp Efficiency

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov

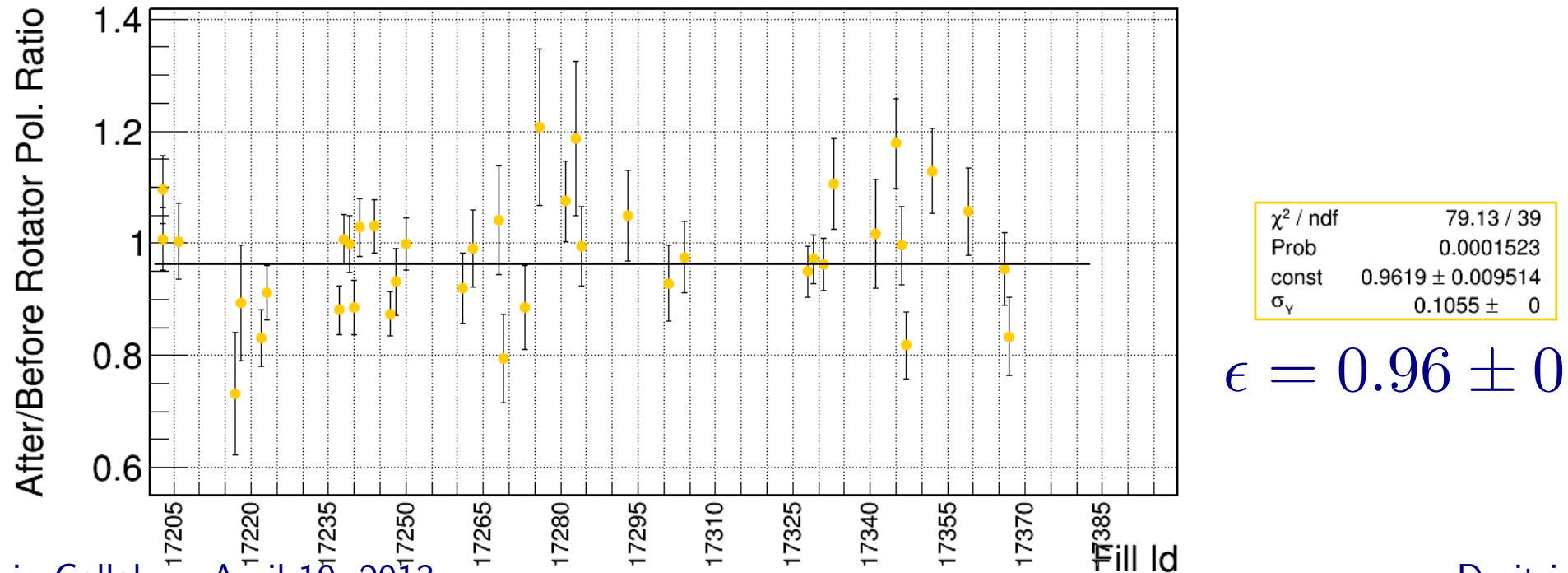


Rotator Ramp Efficiency

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov



$$\epsilon = 0.95 \pm 0.01$$

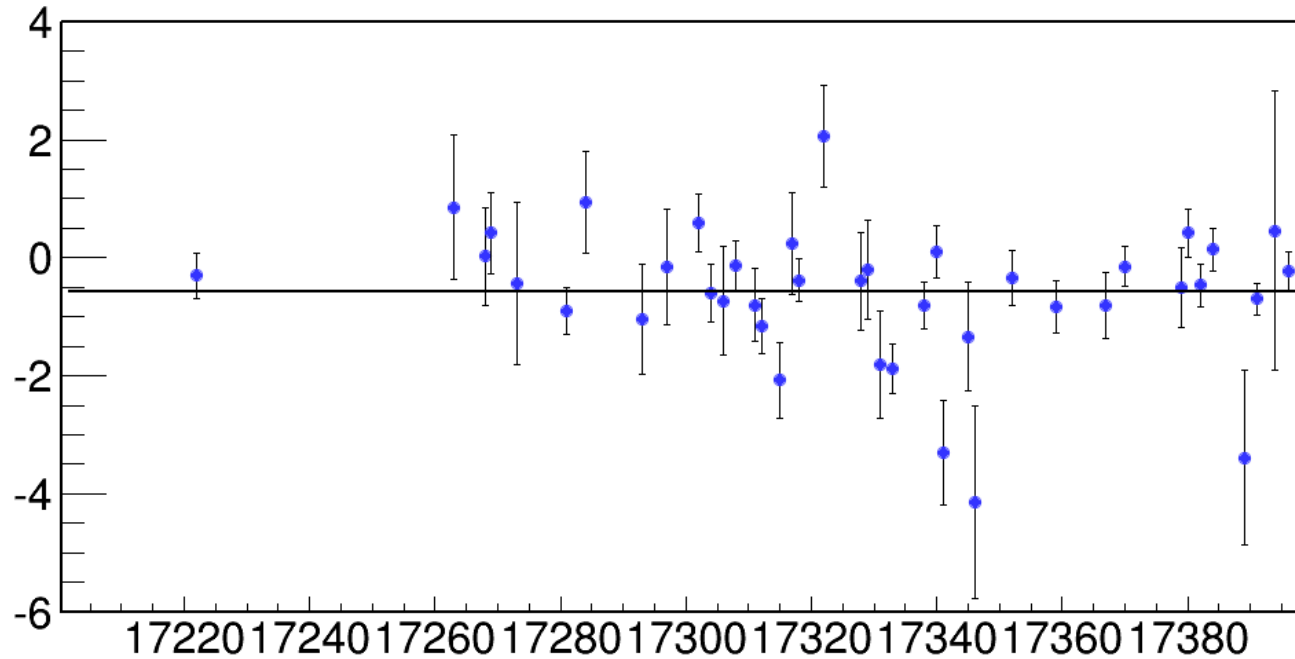


$$\epsilon = 0.96 \pm 0.01$$

Polarization Decay in Fill

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov

Polar. Slope, %/hour

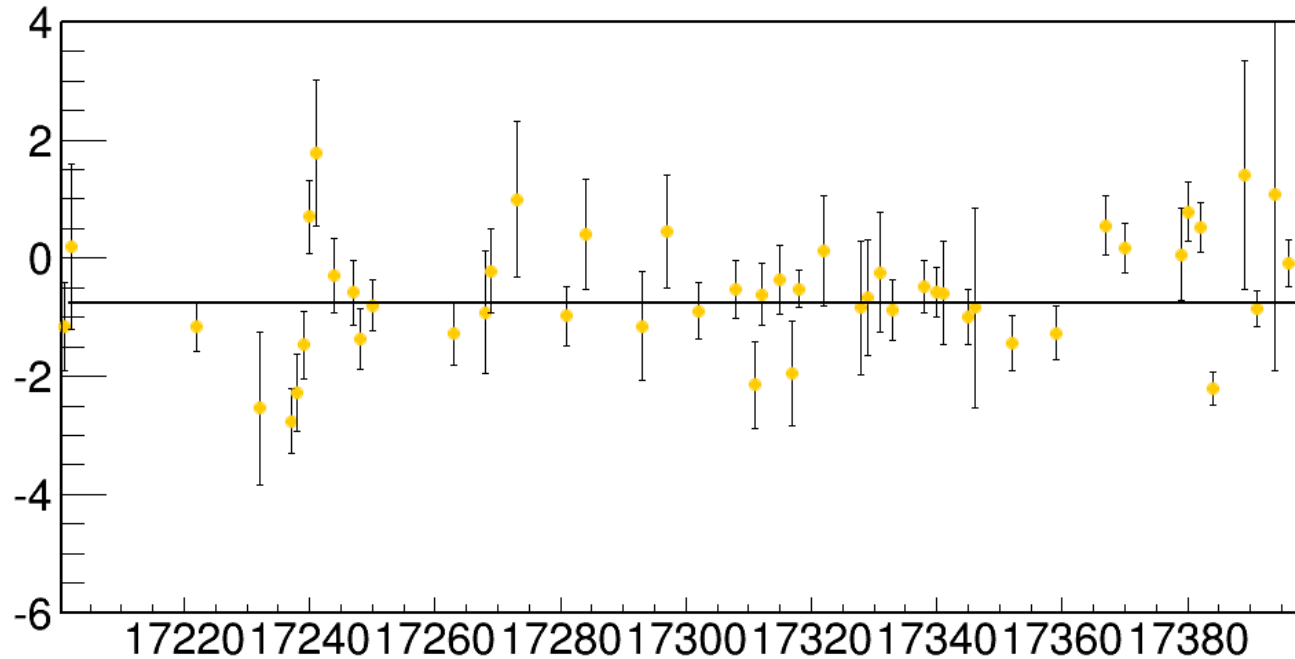


Entries	59
Mean	1.735e+04
RMS	29.22
Underflow	0
Overflow	0
Integral	-26.32
χ^2 / ndf	111.4 / 40
Prob	1.163e-08
p0	-0.5771 ± 0.0796

$$\epsilon = 0.97 \pm 0.01$$

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov

Polar. Slope, %/hour



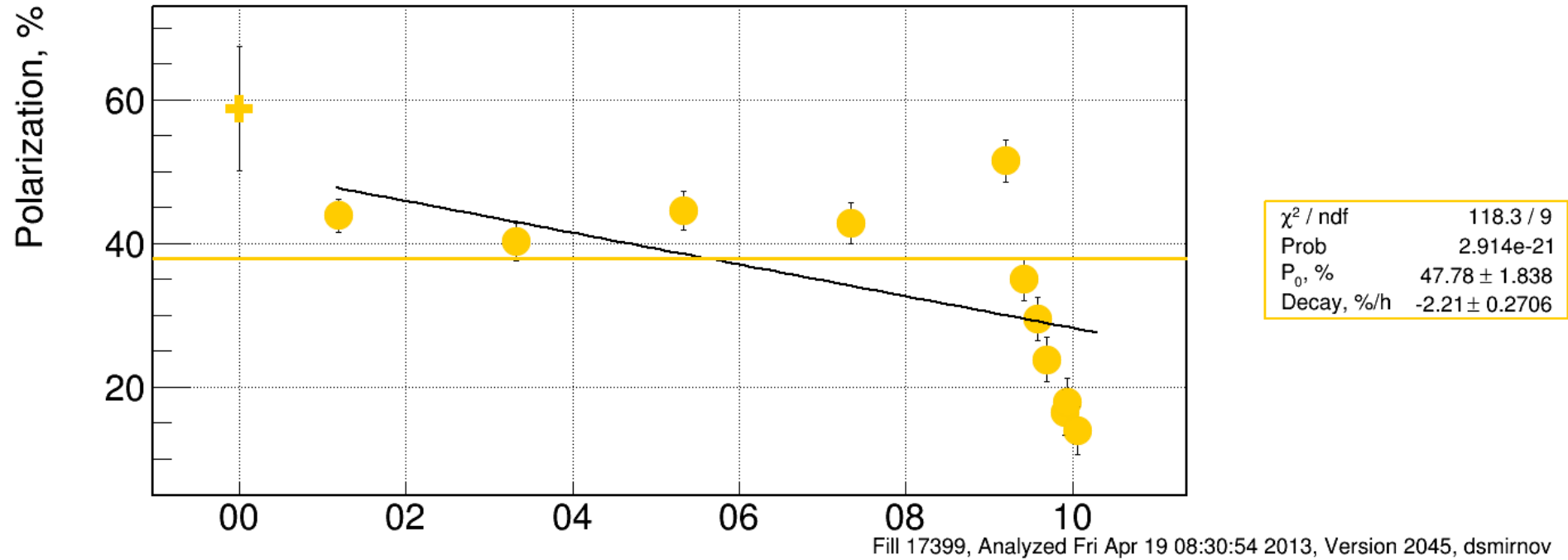
Entries	73
Mean	1.728e+04
RMS	44.18
Underflow	0
Overflow	0
Integral	-28.72
χ^2 / ndf	122.2 / 50
Prob	5.556e-08
p0	-0.7535 ± 0.0766

$$\epsilon = 0.96 \pm 0.01$$

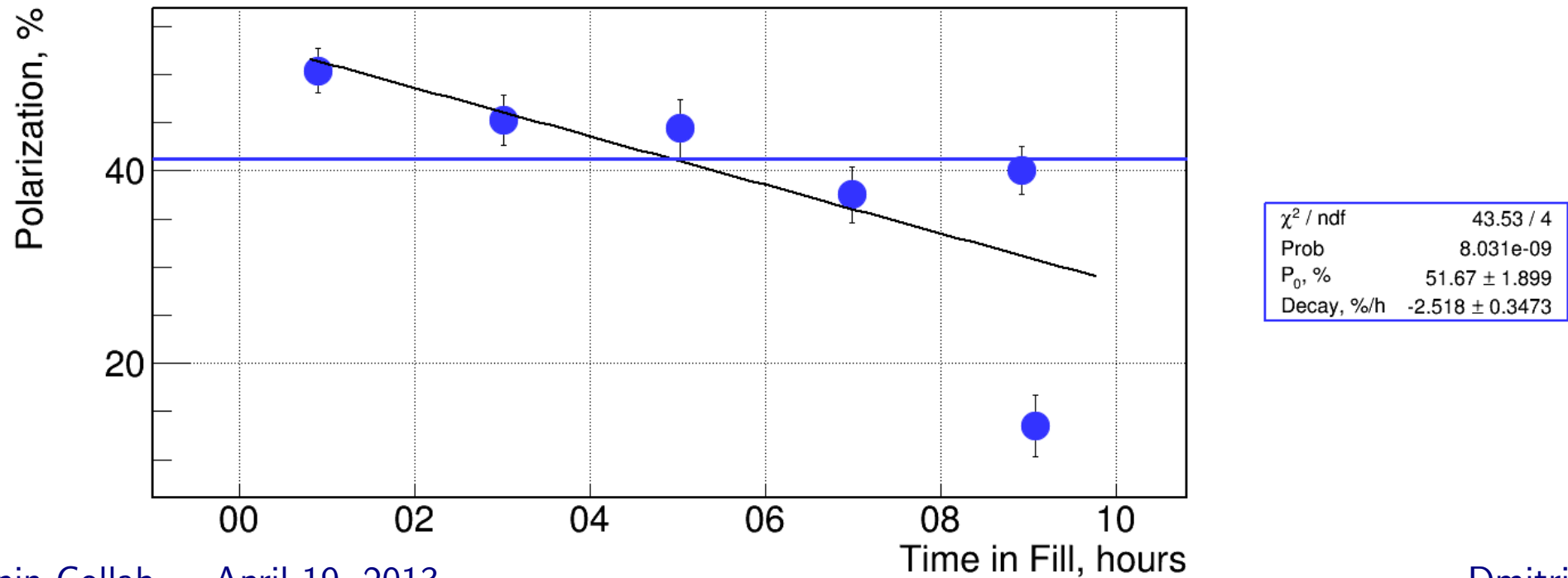
Fill Id

Polarization Decay in Fill

Fill 17384, Analyzed Fri Apr 19 08:30:33 2013, Version 2045, dsmirnov

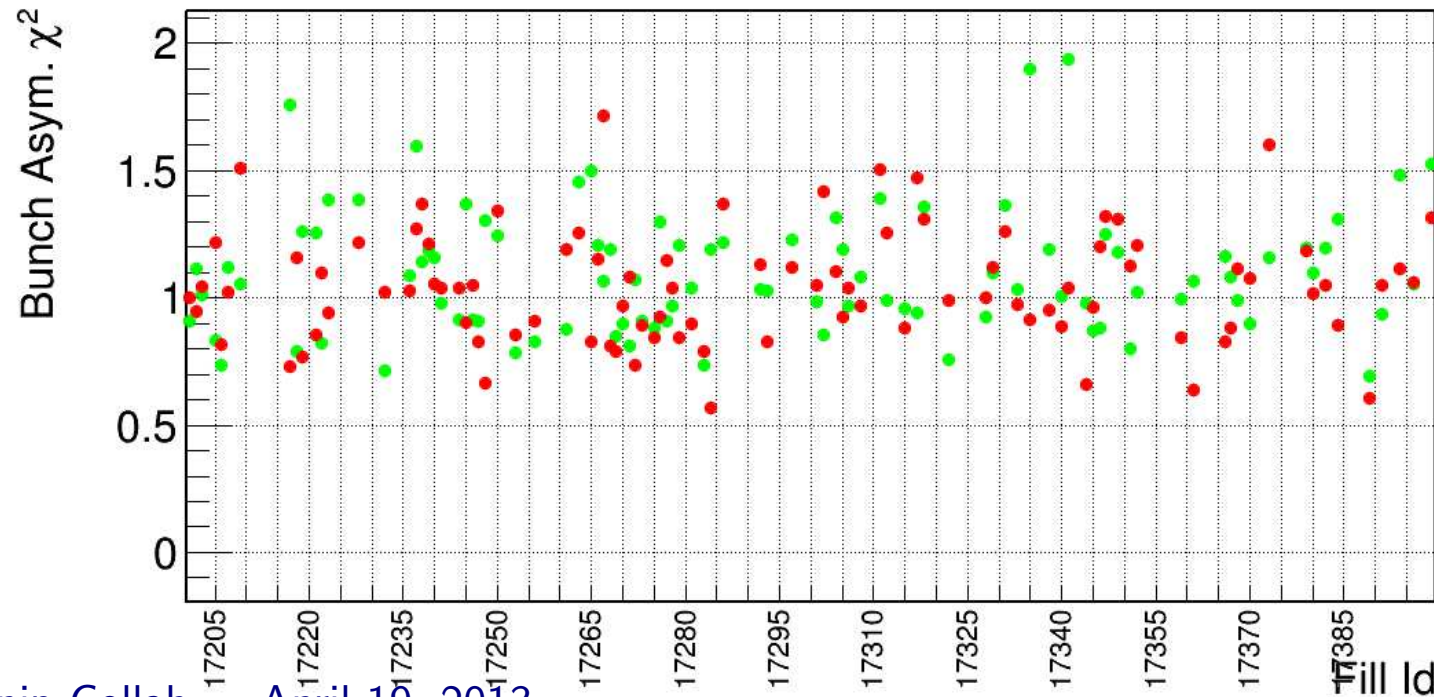
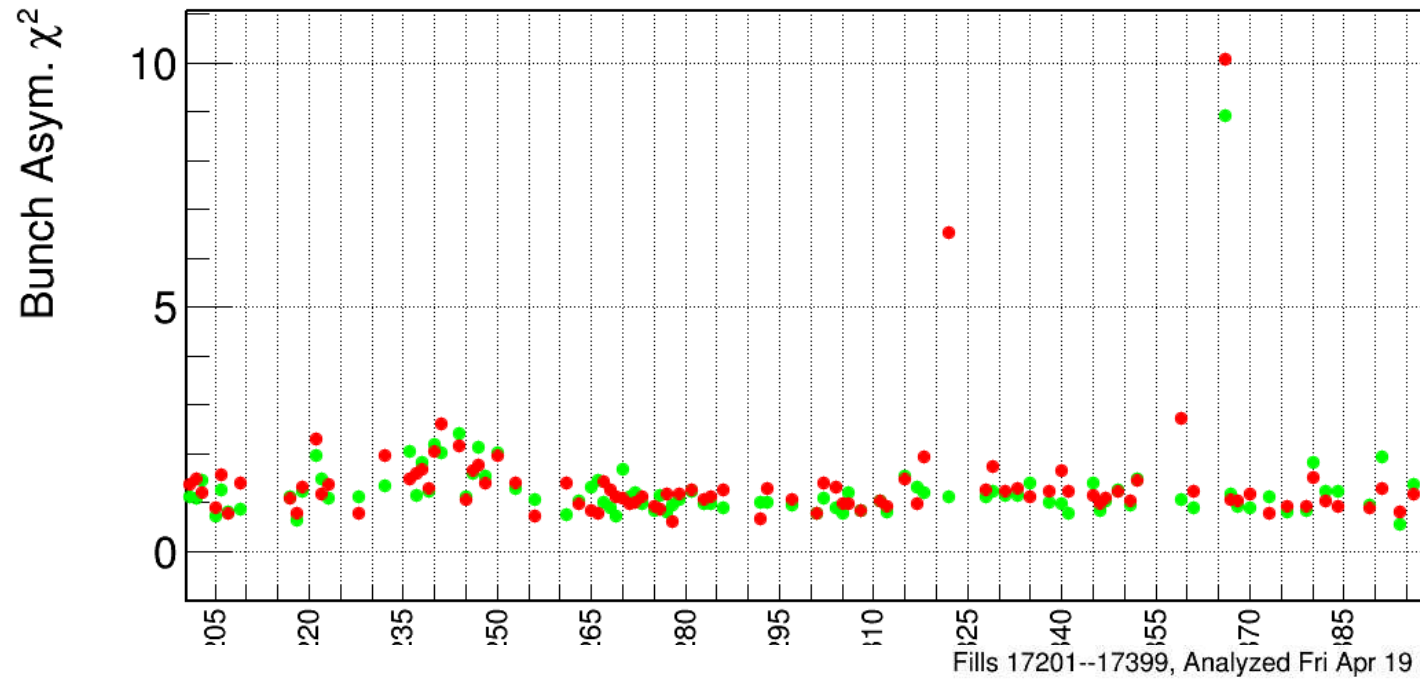


Fill 17399, Analyzed Fri Apr 19 08:30:54 2013, Version 2045, dsmirnov



Bunch Asymmetries

Fills 17201--17399, Analyzed Fri Apr 19 08:24:16 2013, Version 2045, dsmirnov



Bunch Asymmetries

Fill 17366, Analyzed Fri Apr 19 08:29:58 2013, Version 2045, dsmirnov

