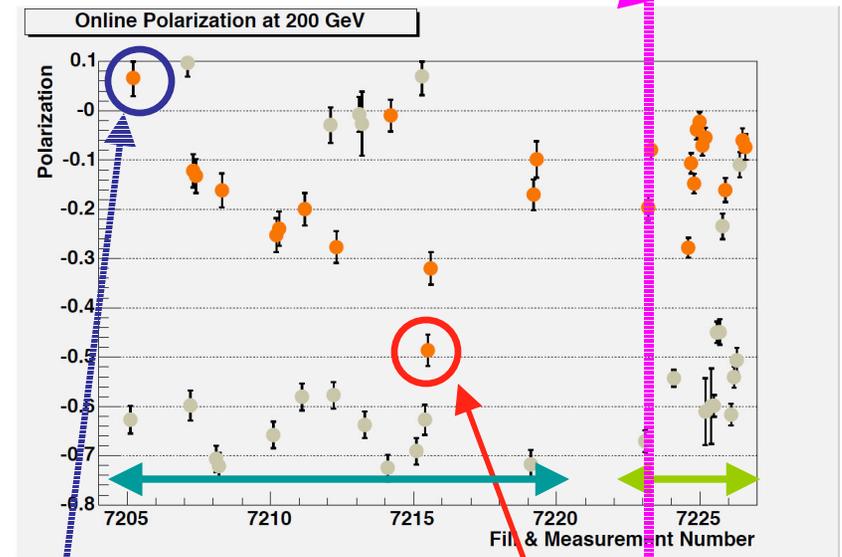
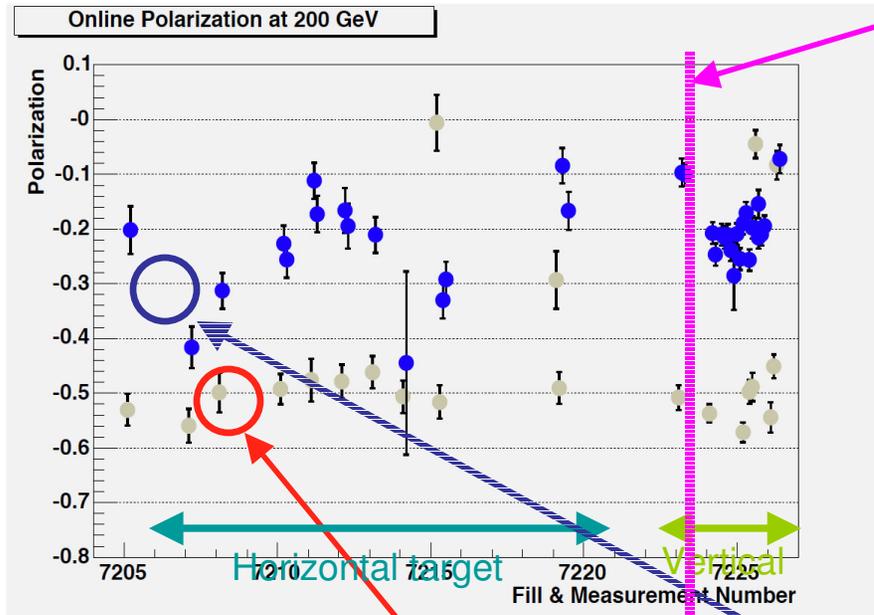


200 GeV 1st Path Analysis

Online Configuration Updated



7207.002

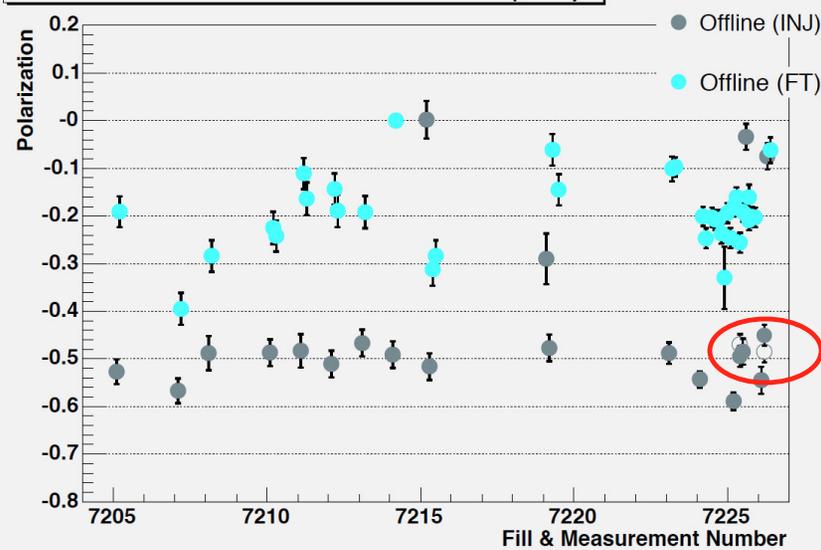
8 bunches

7215.105

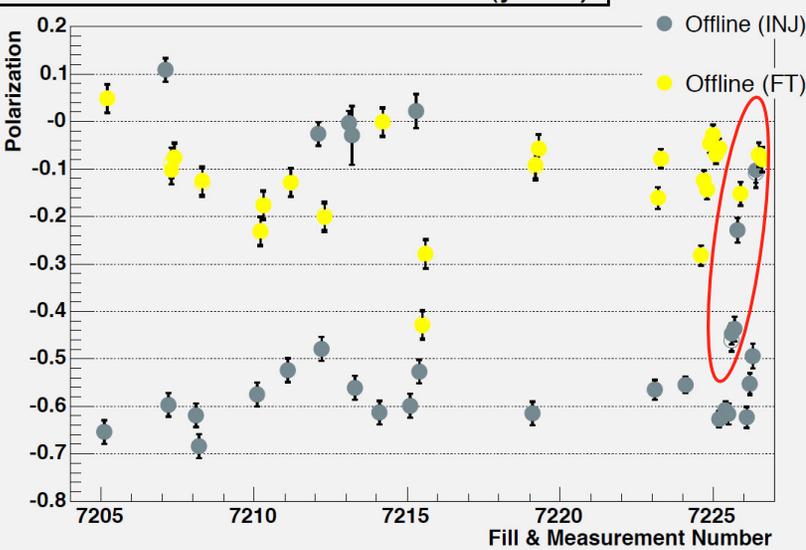
- Are measurements $P > 40\%$ true?

Before/After Fine Tuning on Timing

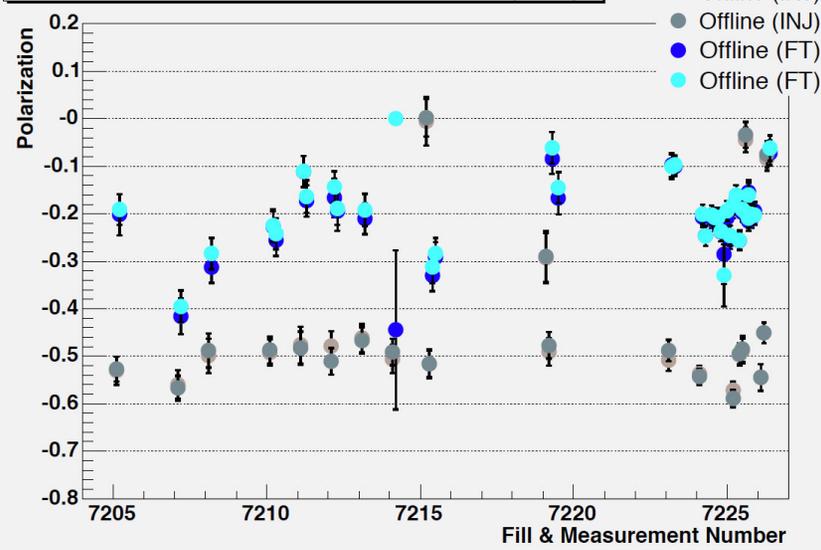
Offline/Online Polarization at 200 GeV (blue)



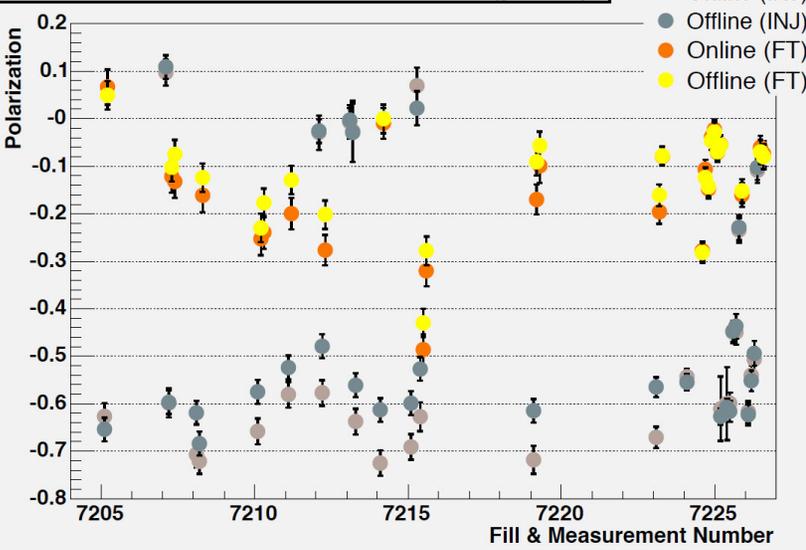
Offline/Online Polarization at 200 GeV (yellow)



Offline/Online Polarization at 200 GeV (blue)



Offline/Online Polarization at 200 GeV (yellow)

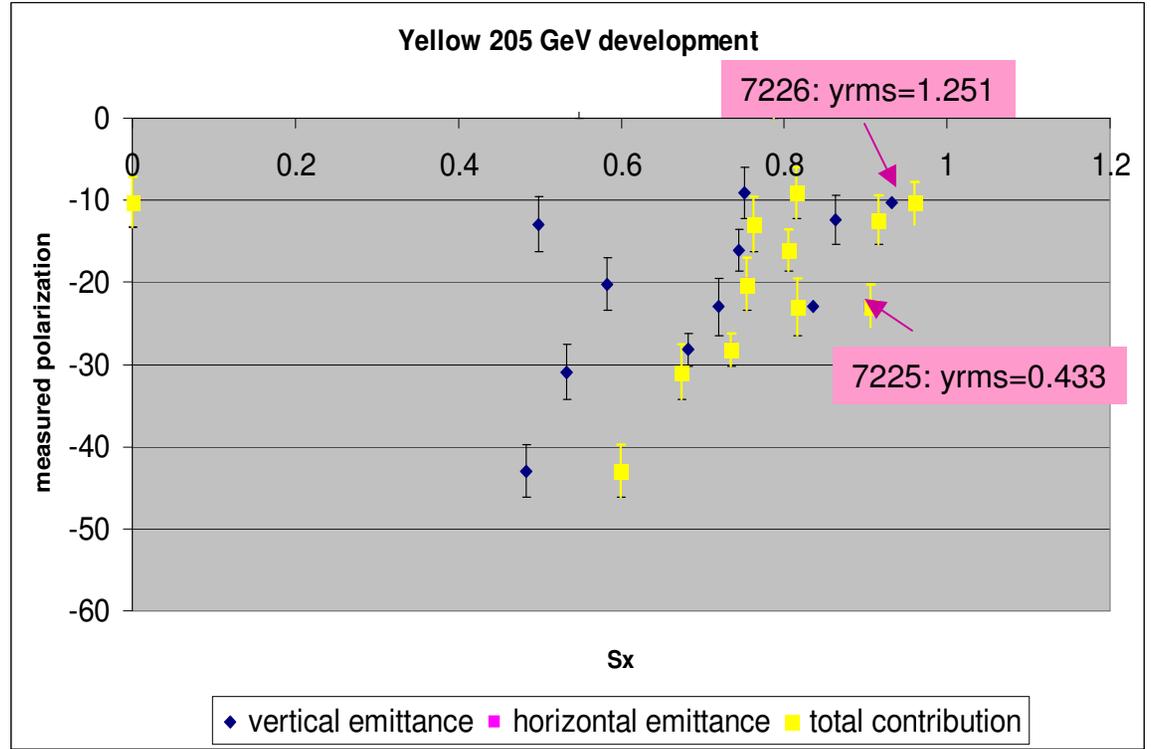


AA2: vertical emittance at 1st resonance
 AE2: vertical emittance at 2nd resonance
 Z2: horizontal emittance at 1st resonance
 AD2: horizontal emittance at 2nd resonance

Q2: 0.7-Qy at 1st resonance
 P2: 0.7-Qx at 1st resonance
 V2: min(0.7-Qx) around 2nd resonance
 W2: min(0.7-Qy) around 2nd resonance

$$F.M. = \frac{\sqrt{a\varepsilon_{x,y}}}{\sqrt{a\varepsilon_{x,y} + (|v_{x,y} - 0.7| - \frac{7}{5}|v_s - 0.5|)^2}}$$

$$|v_s - 0.5| = \arcsin(\sin^2(\frac{\pi 0.25 \frac{\gamma}{250} |\sigma_y - \sigma_0|}{2})) / \pi$$

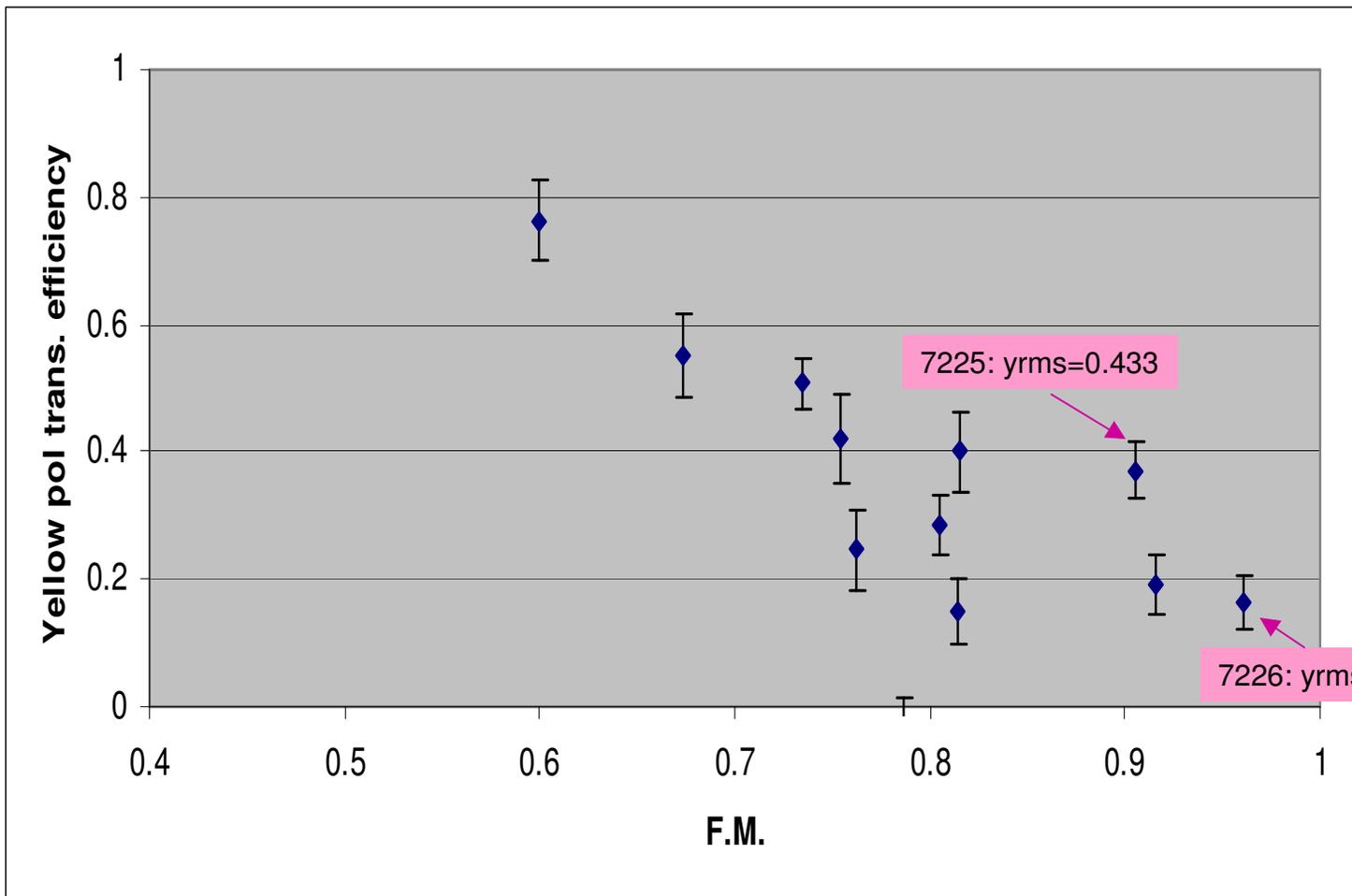


F.M

Blue diamonds = $\text{SQRT}(\text{ABS}(0.0005 * 0.2025 * \text{MAX}(\text{AA2}, \text{AE2}) / 60)) / \text{SQRT}((\text{MIN}(\text{ABS}(\text{Q2} - 7 * \text{K2} / 5), \text{ABS}(\text{P2} - 7 * \text{K2} / 5), \text{ABS}(\text{V2} - 7 * \text{M2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5), \text{ABS}(\text{V2} - 7 * \text{K2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5)) * \text{MIN}(\text{ABS}(\text{Q2} - 7 * \text{K2} / 5), \text{ABS}(\text{P2} - 7 * \text{K2} / 5), \text{ABS}(\text{V2} - 7 * \text{M2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5), \text{ABS}(\text{V2} - 7 * \text{K2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5))) + 0.0005 * 0.2025 * \text{MAX}(\text{AA2}, \text{AE2}) / 60))$

Pink squares = $\text{SQRT}(\text{ABS}(0.0005 * 0.2025 * \text{MAX}(\text{Z2}, \text{AD2}) / 60)) / \text{SQRT}((\text{MIN}(\text{ABS}(\text{P2} - 7 * \text{K2} / 5), \text{ABS}(\text{V2} - 7 * \text{M2} / 5), \text{ABS}(\text{Q2} - 7 * \text{K2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5), \text{ABS}(\text{V2} - 7 * \text{K2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5)) * \text{MIN}(\text{ABS}(\text{P2} - 7 * \text{K2} / 5), \text{ABS}(\text{V2} - 7 * \text{M2} / 5), \text{ABS}(\text{Q2} - 7 * \text{K2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5), \text{ABS}(\text{V2} - 7 * \text{K2} / 5), \text{ABS}(\text{W2} - 7 * \text{M2} / 5))) + 0.0005 * 0.2025 * \text{MAX}(\text{Z2}, \text{AD2}) / 60))$

Yellow squares = max (Blue diamonds + Pink squares)



Status

- 1st path analysis for 200GeV runs were completed
- Key histograms were all checked by eye.
- Runs with problems were listed. (Mostly wrong spin pattern)
- Suspicious behaviors in individual strip are unresolved. Proper treatment of them may changes the polarization by a few percent in future.

From Itaru

- No reliable IPM data from Blue ring
- Currently working on the covariance matrix of the fitting.