

Beam-based sextupole polarity check

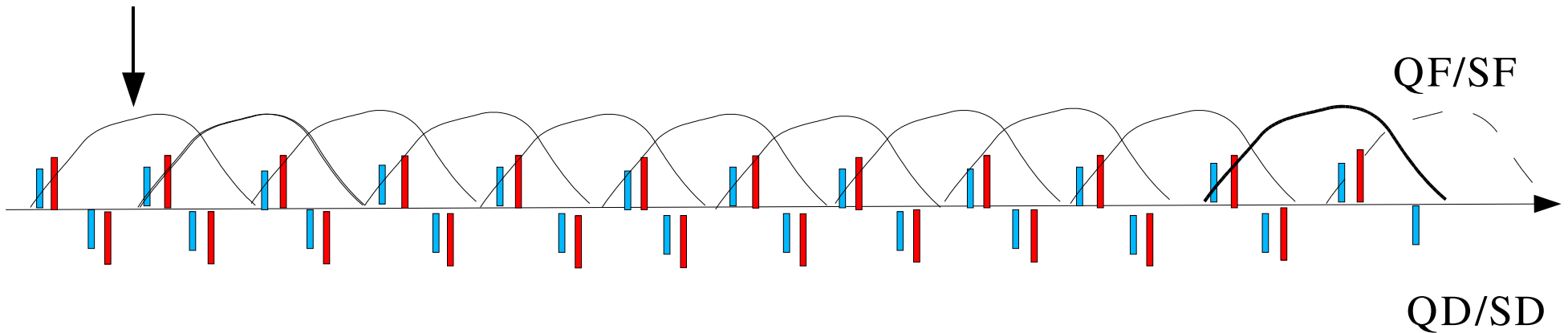
(Session: March 8 2006)

Y. Luo, T. Satogata, Jen Niedzieland, P. Cameron

1. Bump setup scripts checked.
2. Some data taken for two arcs of Yellow ring.
3. PLL tune data quality issues
4. Plan for March 22 session (final session)

- Principle

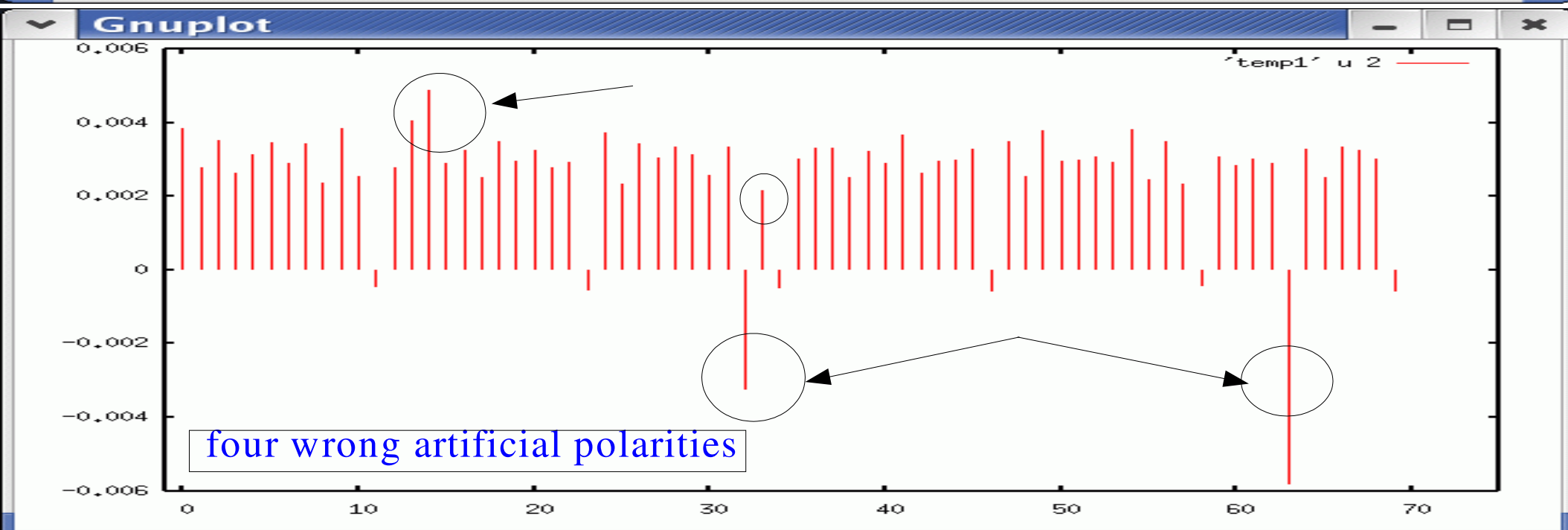
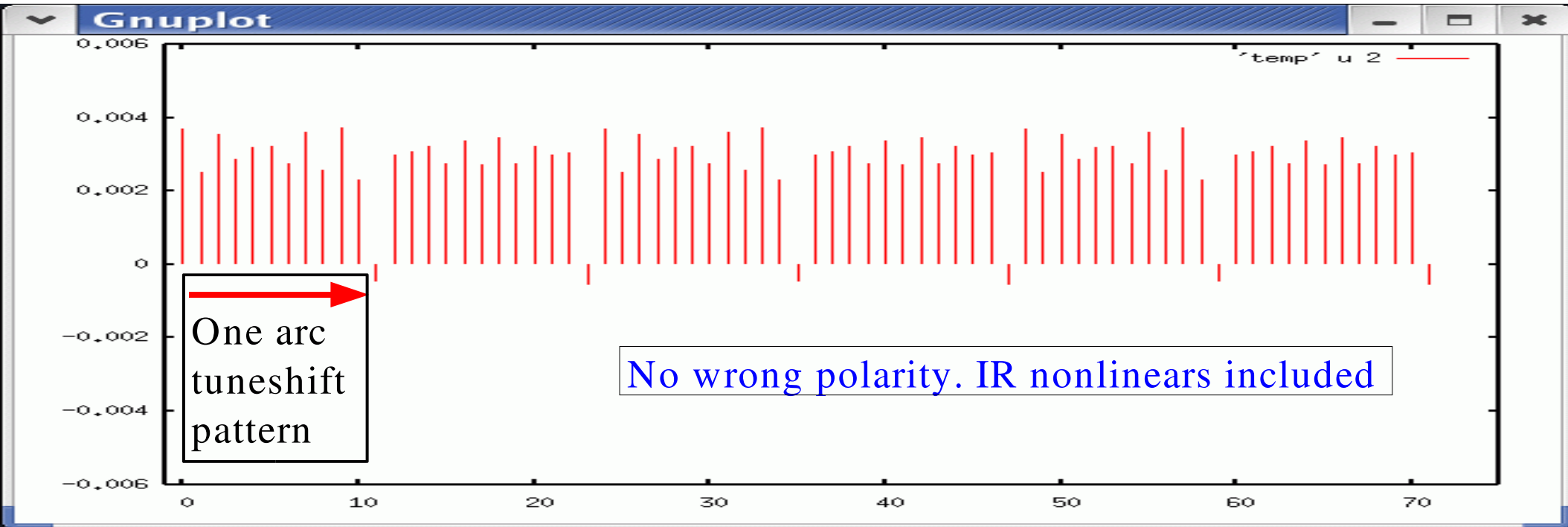
11 FODO cells, 12 QF, 11 QD in the ARC



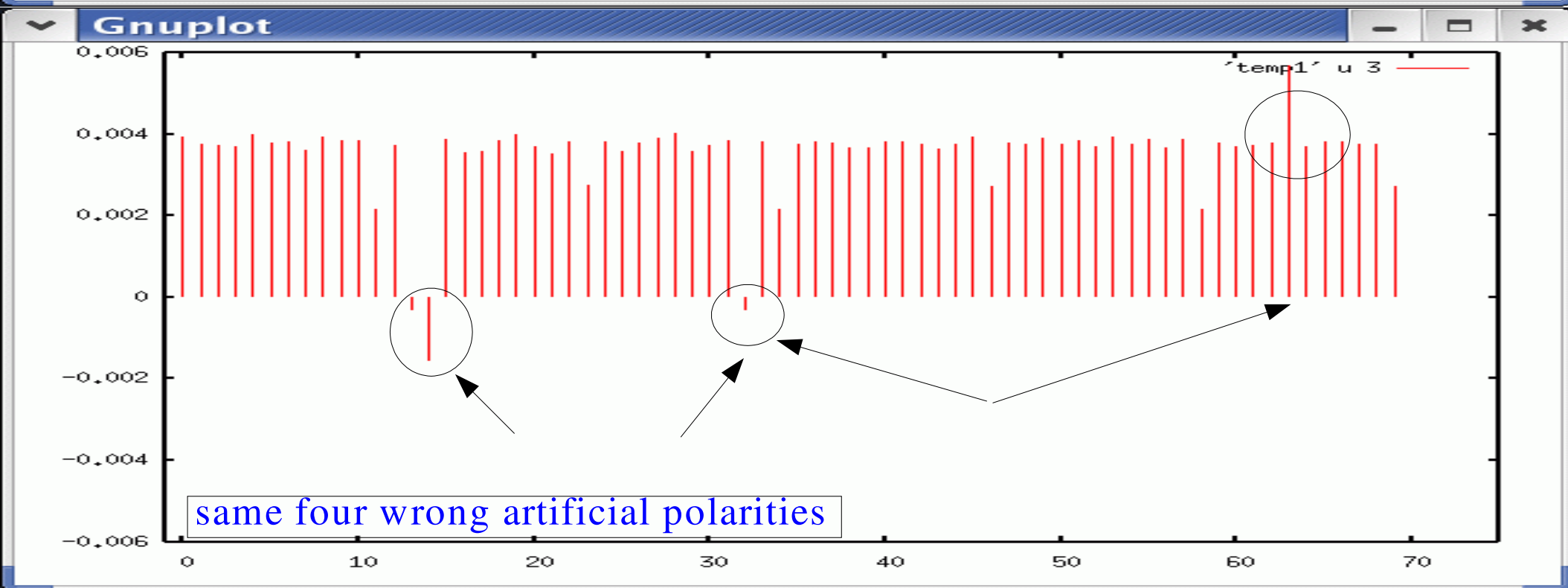
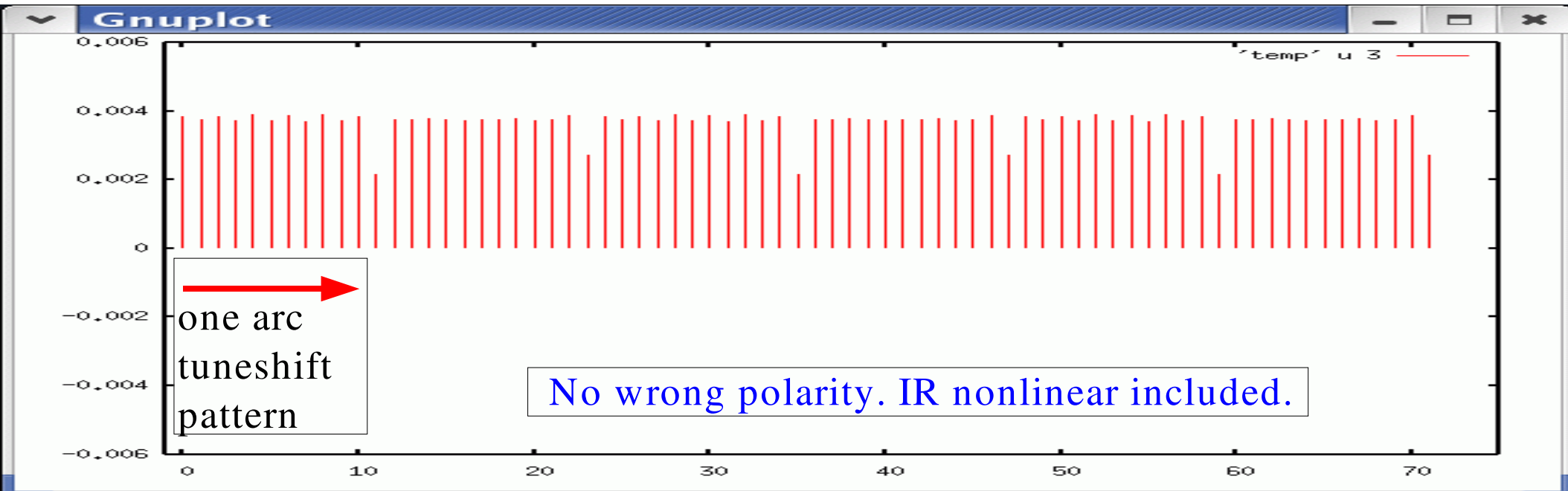
10 almost same bumps, 1 very similar bump, 1 slightly different bump

One bump includes only **ONE** SF, **TWO** SDs

- Simulation: Horizontal tune shifts



■ Simulation: Vertical tune shifts



Local Repeatative Bumps Achieved

Yellow Orbit Display

File Acquire Orbit Correction Help

X orbit

orbit [mm]

s [m]

Beam <== Lattice: Yellow

Ring

magnets hsteer vsteer hbpms vbpms

Y orbit

orbit [mm]

s [m]

Scale Control:

Region: Ring Orbit scale [mm]: 0.5

Orbit list:

S	D	Name	Comment
	+	2	ThreeBump data yi6-th7 yi6-th9 yi6-th11 3
	+	3	ThreeBump data yi6-th9 yi6-th11 yi6-th13 3
	+	4	ThreeBump data yi6-th11 yi6-th13 yi6-th15
	+	5	ThreeBump data yi6-th13 yi6-th15 yi6-th17
	+	6	ThreeBump data yi6-th15 yi6-th17 yi6-th19
	+	7	ThreeBump data yi6-th17 yi6-th19 yi7-th21
	+	8	ThreeBump data yi6-th19 yi7-th21 yi7-th19
	+	9	ThreeBump data yi7-th21 yi7-th19 yi7-th17
	+	10	ThreeBump data yi7-th19 yi7-th17 yi7-th15
#	+	1	ThreeBump data yi7-th17 yi7-th15 yi7-th13

1

Turn: Increment:

Data Delete Trigger Avg Trigger TBT

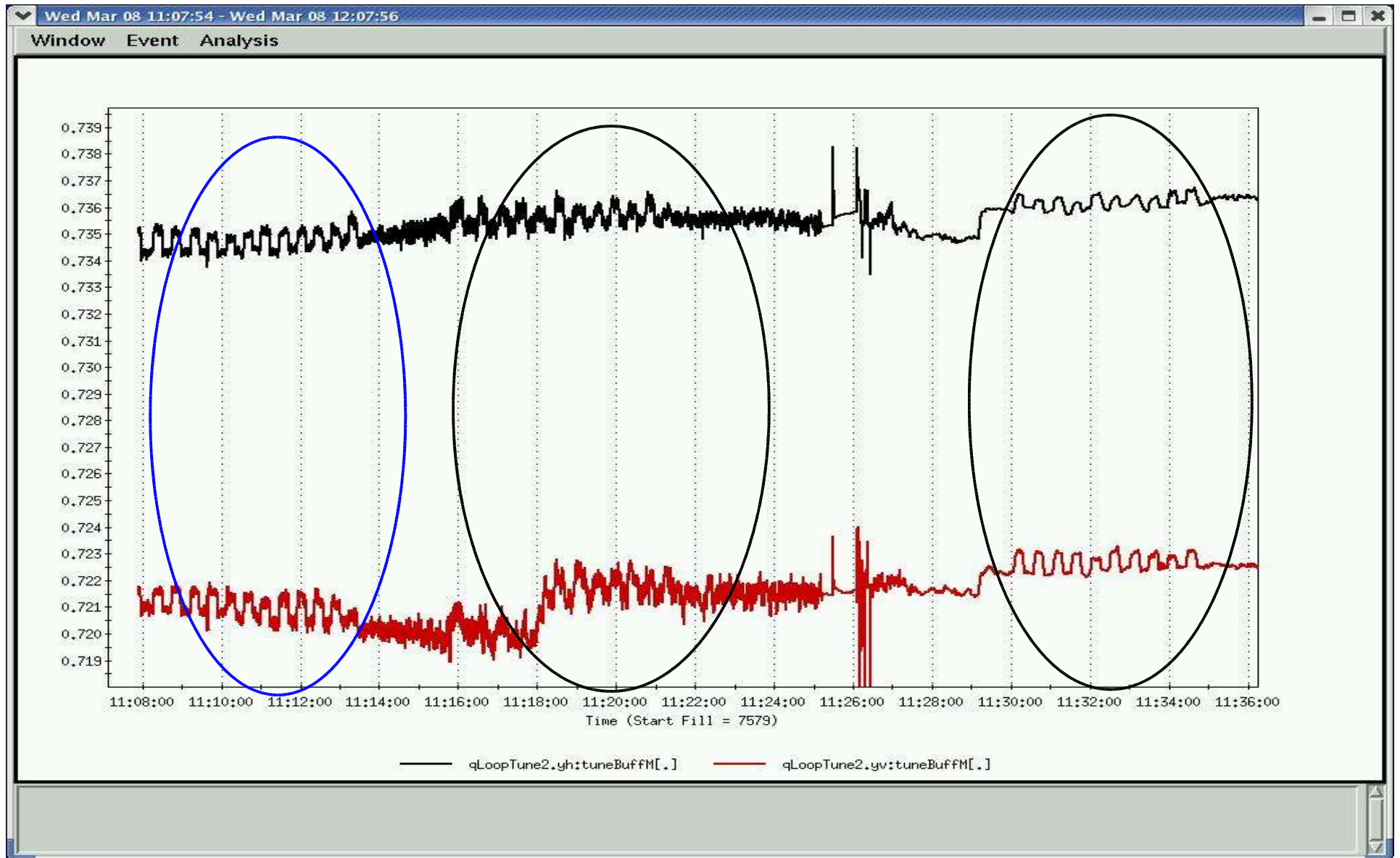
Orbit Statistics:

	mean	rms	max	Nbpms
X:	0	0	0	0
Y:	0	0	0	0

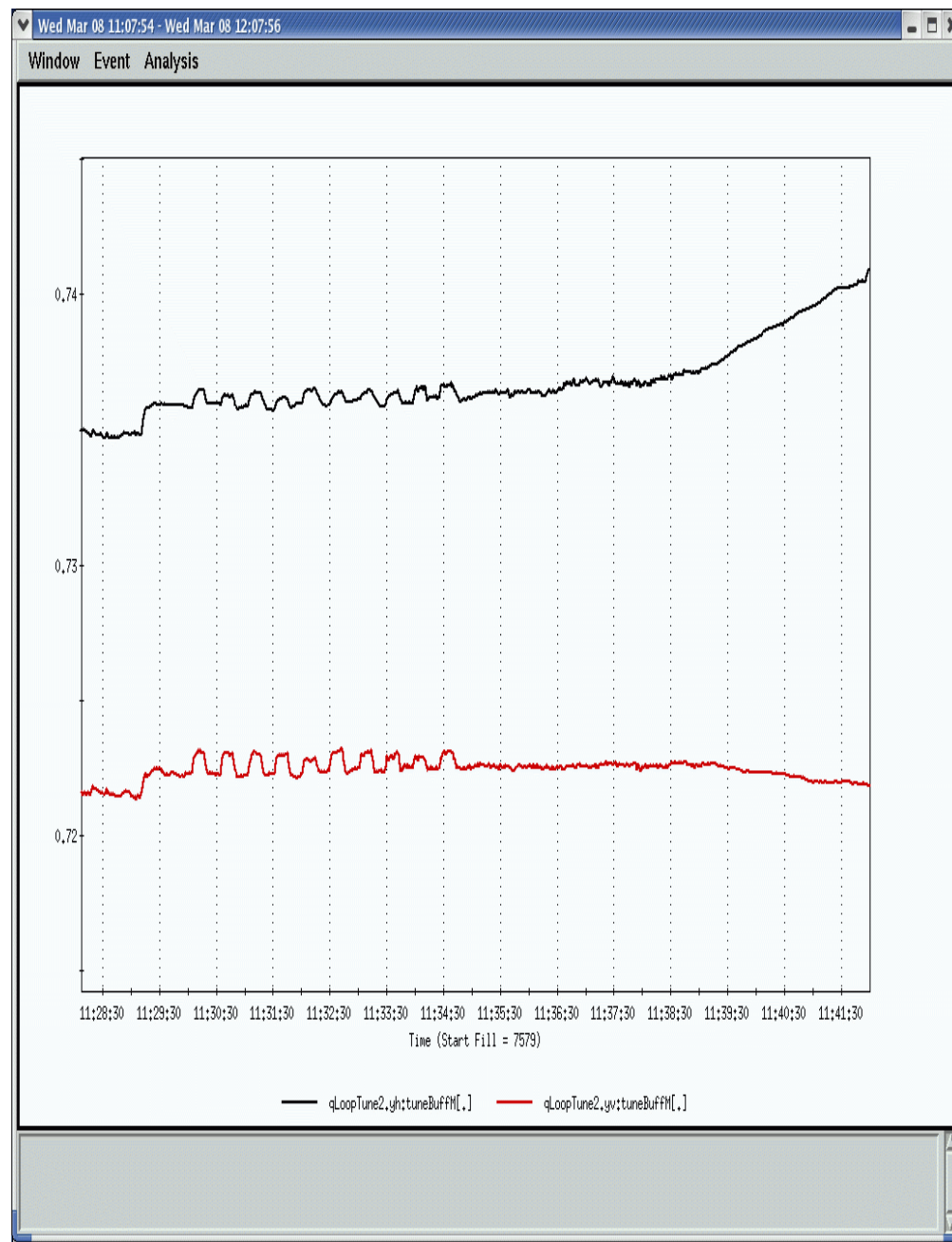
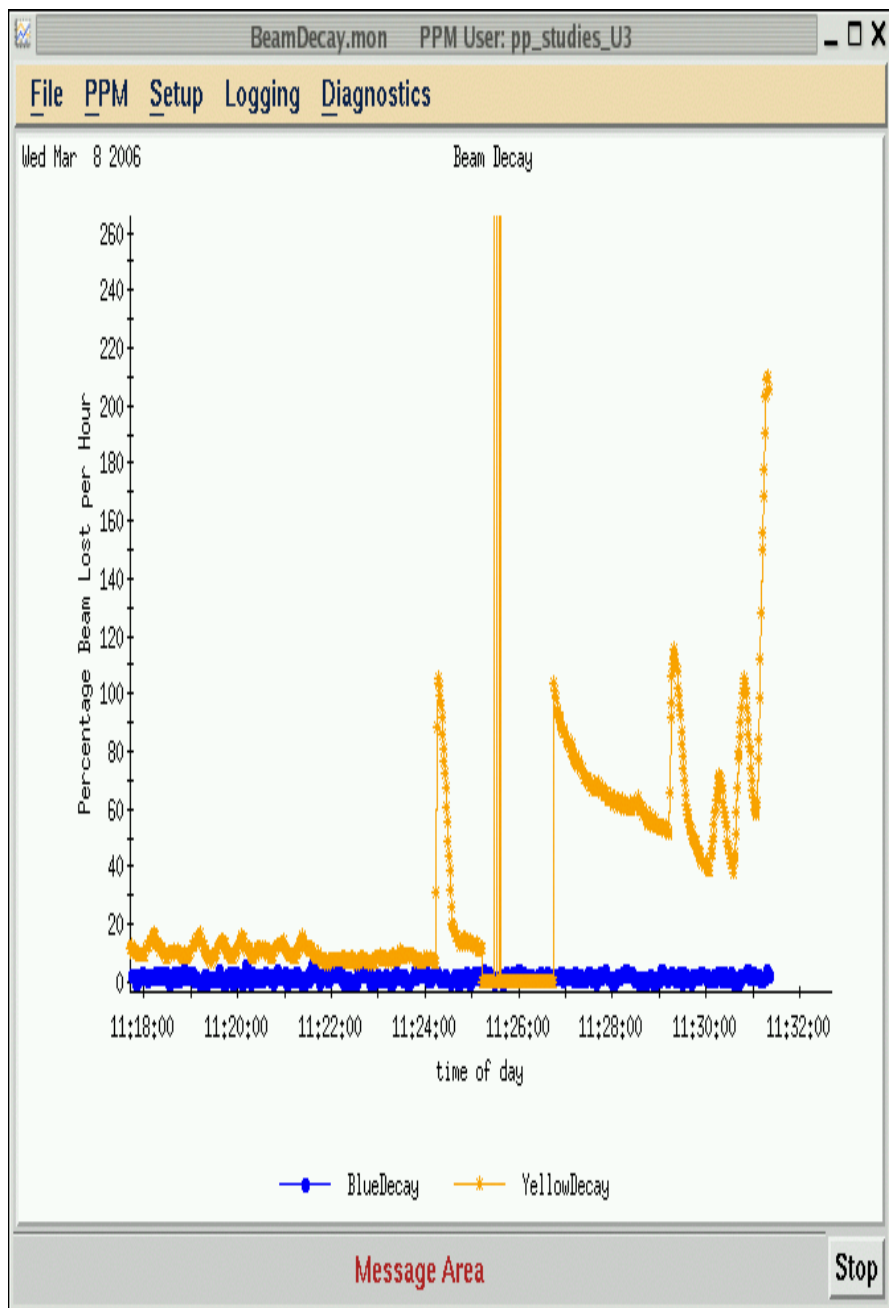
◆ Displayed Region
◆ Arcs

The orbit has been loaded from /operations/app_store/RunData/run_fy06/07579/RHIC/RhicOrbitDisplay/Yellow/orbit_data/Mar_08_10:45:15.10604.yi7-th21.3.sdds
 The orbit has been loaded from /operations/app_store/RunData/run_fy06/07579/RHIC/RhicOrbitDisplay/Yellow/orbit_data/Mar_08_10:45:42.10616.yi7-th19.3.sdds
 The orbit has been loaded from /operations/app_store/RunData/run_fy06/07579/RHIC/RhicOrbitDisplay/Yellow/orbit_data/Mar_08_10:46:11.10634.yi7-th17.3.sdds
 The orbit has been loaded from /operations/app_store/RunData/run_fy06/07579/RHIC/RhicOrbitDisplay/Yellow/orbit_data/Mar_08_10:46:39.10648.yi7-th15.3.sdds

- Tune shifts from the local bumps



after increasing the chromaticity requested by Peter Cameron



- Work plan

1. Measurements vs. simulations (Y. Luo)
2. Complete the bump scripts for Blue and Yellow (T. Satogata)
3. Close the beam experiment next session on March 22, 2006

beam time: 2.0 hrs

PLL: 245MHz system (available?) / BBQ system
3mm bump gives 10^{-3} tune shift.