

# The Story So Far

February 2013

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11 4K Wave	12	13	14	15 Cold in both rings	16
17	18 PP12 lattice test evening	19	20	21	22	23
24	25	26 First Collisions	27	28 PS work during Day	29 Overnight Stores 109x109	
PS gave us e-lens						
					Start Physics	

## March 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11 6 hour stores with tune between				15 PA Maintenance	16
17	18	19	20 PA Maintenance	21	22	23
24	25 8hr Stores		27 APEX	28	29	30
31	Inject = 200e11					

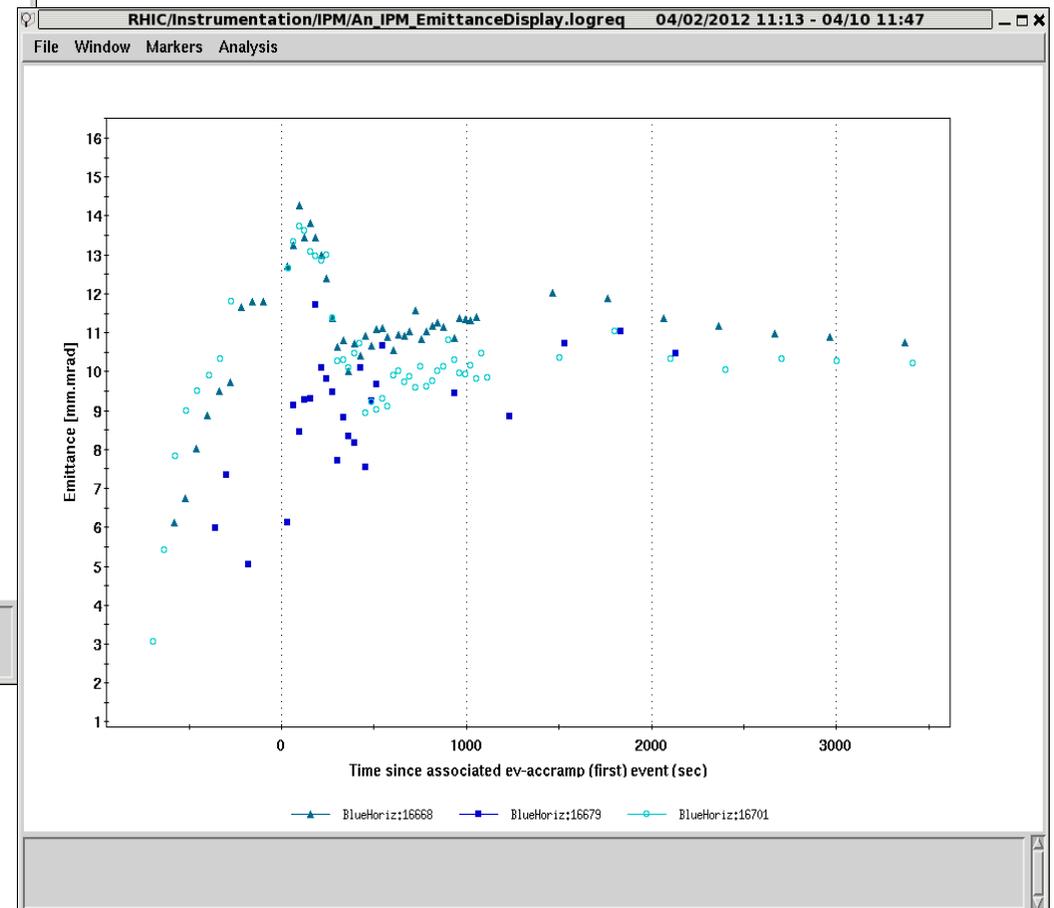
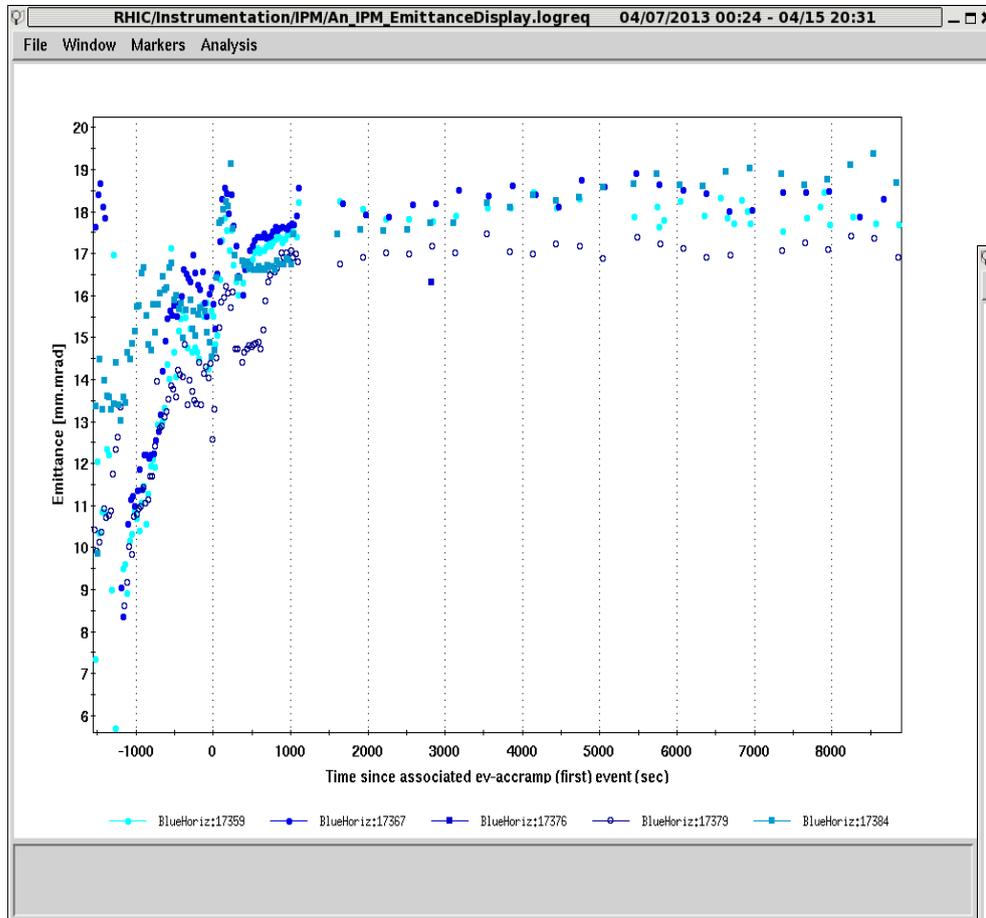
# April 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 Maintenance	4 Switch Fy12 Lattice	5	6 Pushed Intensity
7 Reach 200e11 At FT	8	9	10 APEX	11 Rotator Tuning	12	13
14	15 MD Studies	16	17 Maintenance Golden Store 17396	18	19	20
21	22	23	24 APEX	25 Machine Dev.	26	27
28	29	30				

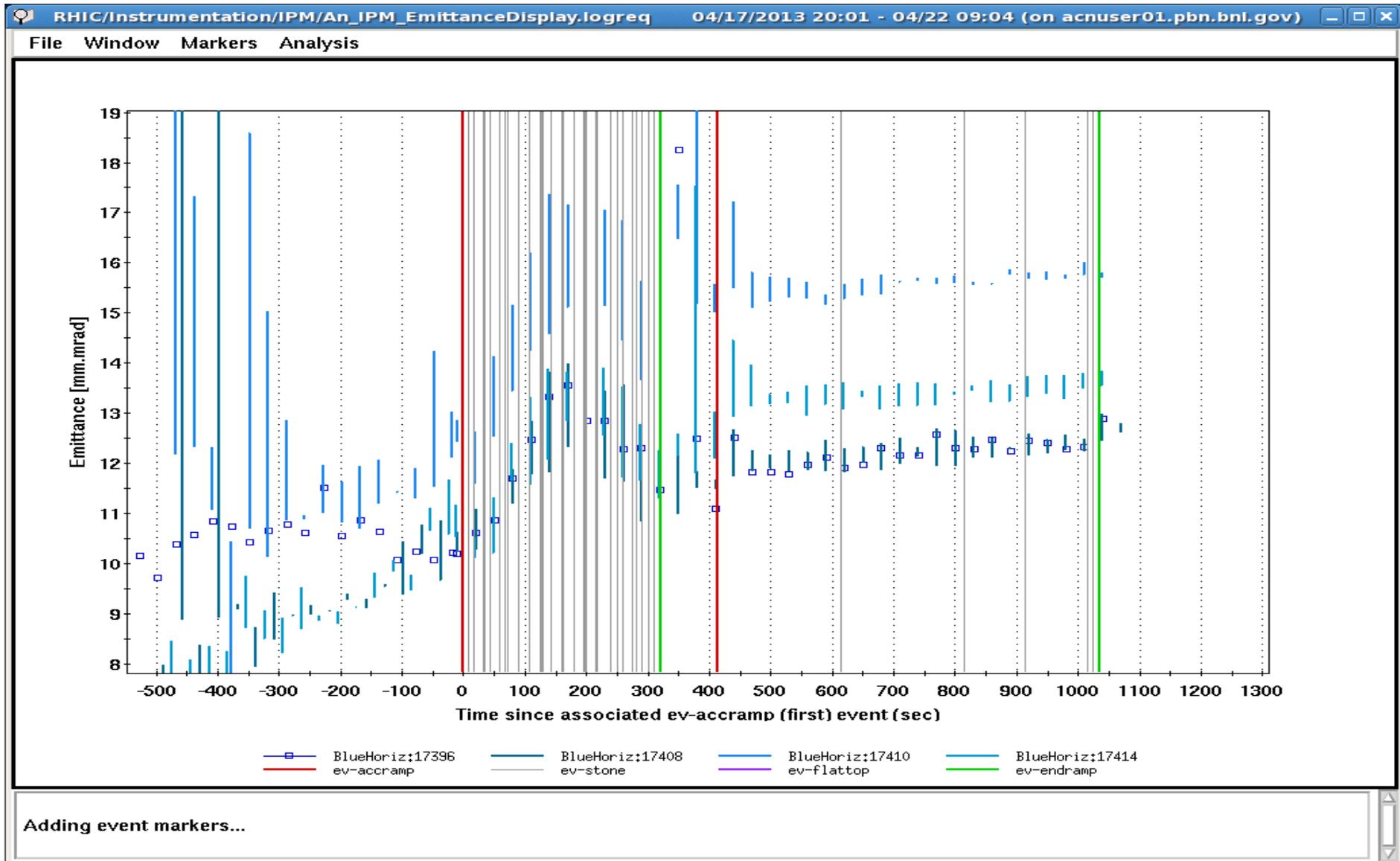
# Past week

- Focus on Transverse emittance seems to have paid off
  - Fix of RF issues in AGS
  - Understanding of intensity threshold for blow up
  - Keeping stable tunes at injection
  - Lower emittance tolerances  $<10\pi$  at injection
  - Remove Pol. Measurement at Injection
- Also great progress on longitudinal emittance:
  - Commission of BB damper on ramp
    - Bunches dropped from 3 to 2.8 nsecs after re-bucketing
- We also progress on understanding Spin tune at Store
  - Effect due to Star bump pushes tune in Yellow 0.475, Blue 0.49
  - Took bump out on ramp and at Store but this was reverted in the process of diagnosing emittance blow up on the ramp
- Progress on Optics correction at Store fixing beta-beat
  - Tested in collision at store

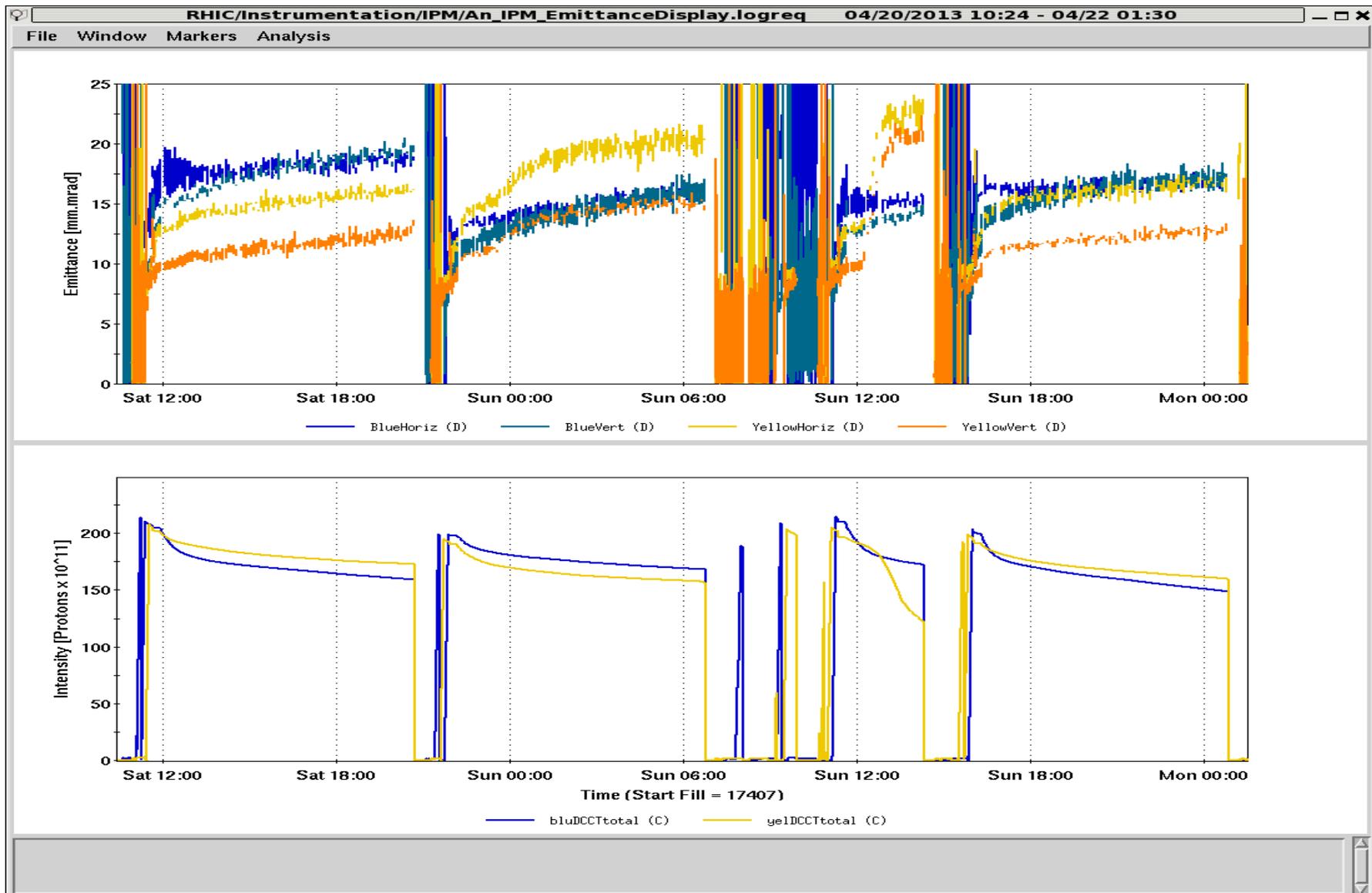
# Blue Horizontal Emittance compare with FY12



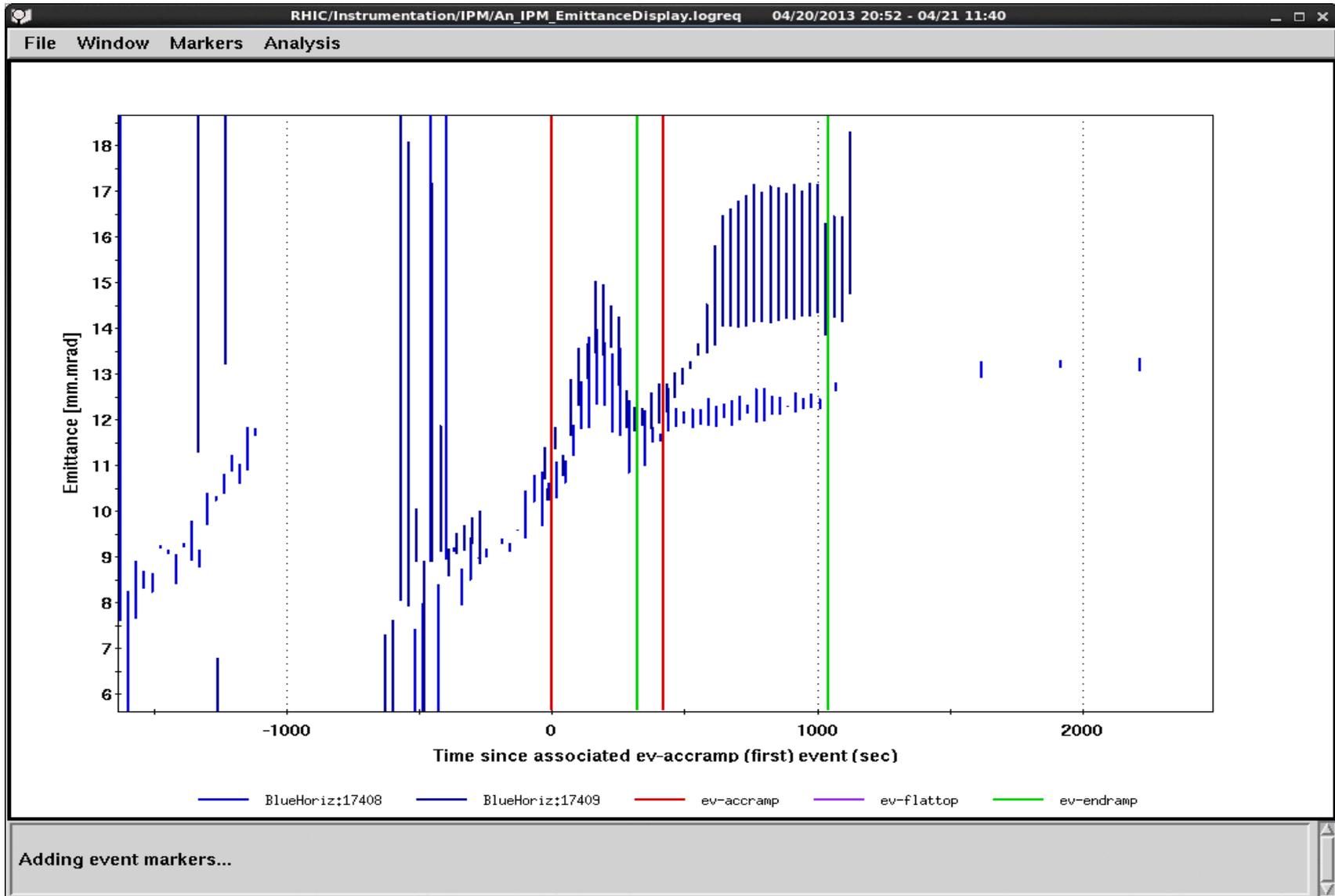
# More recent Stores



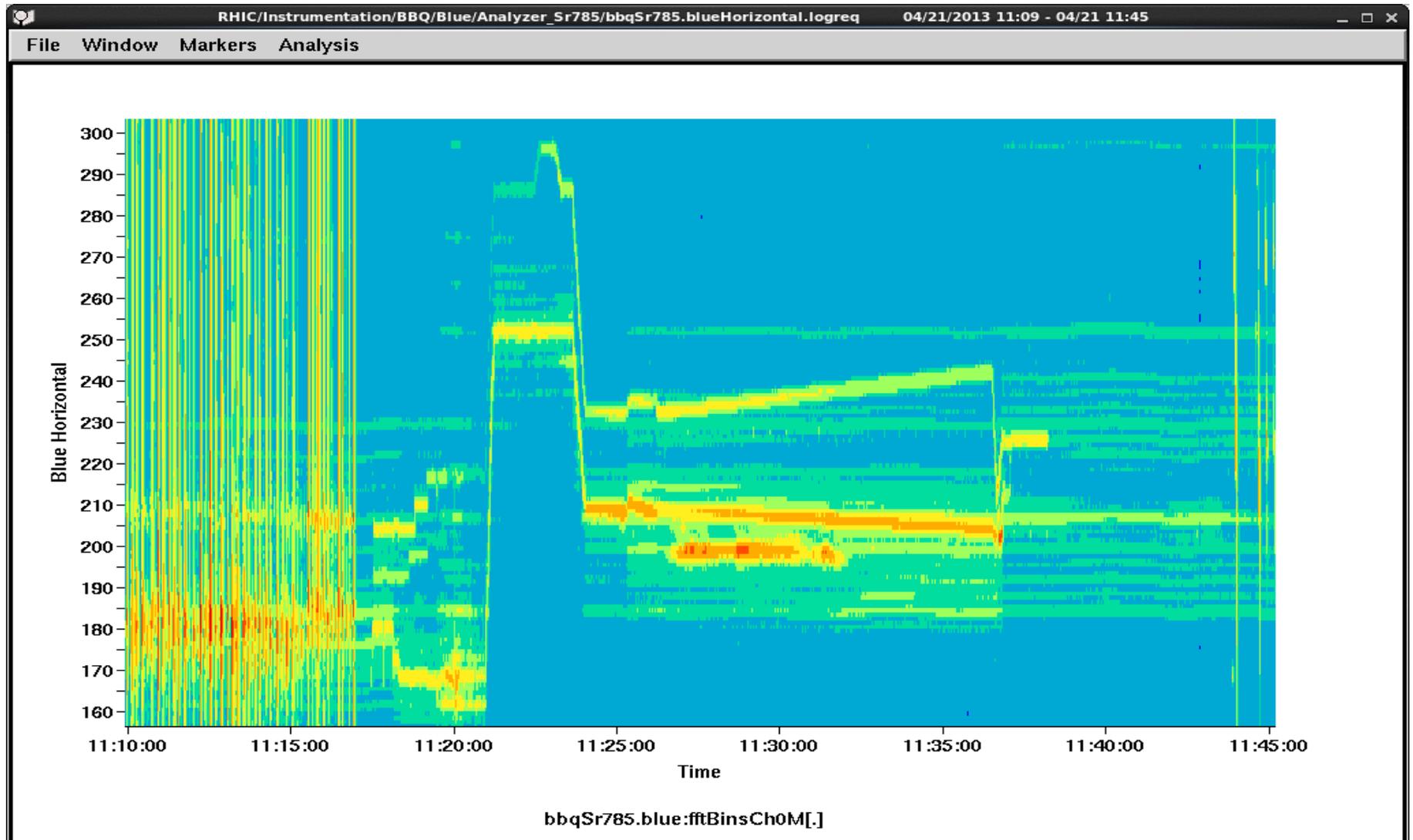
# Blow up during Store



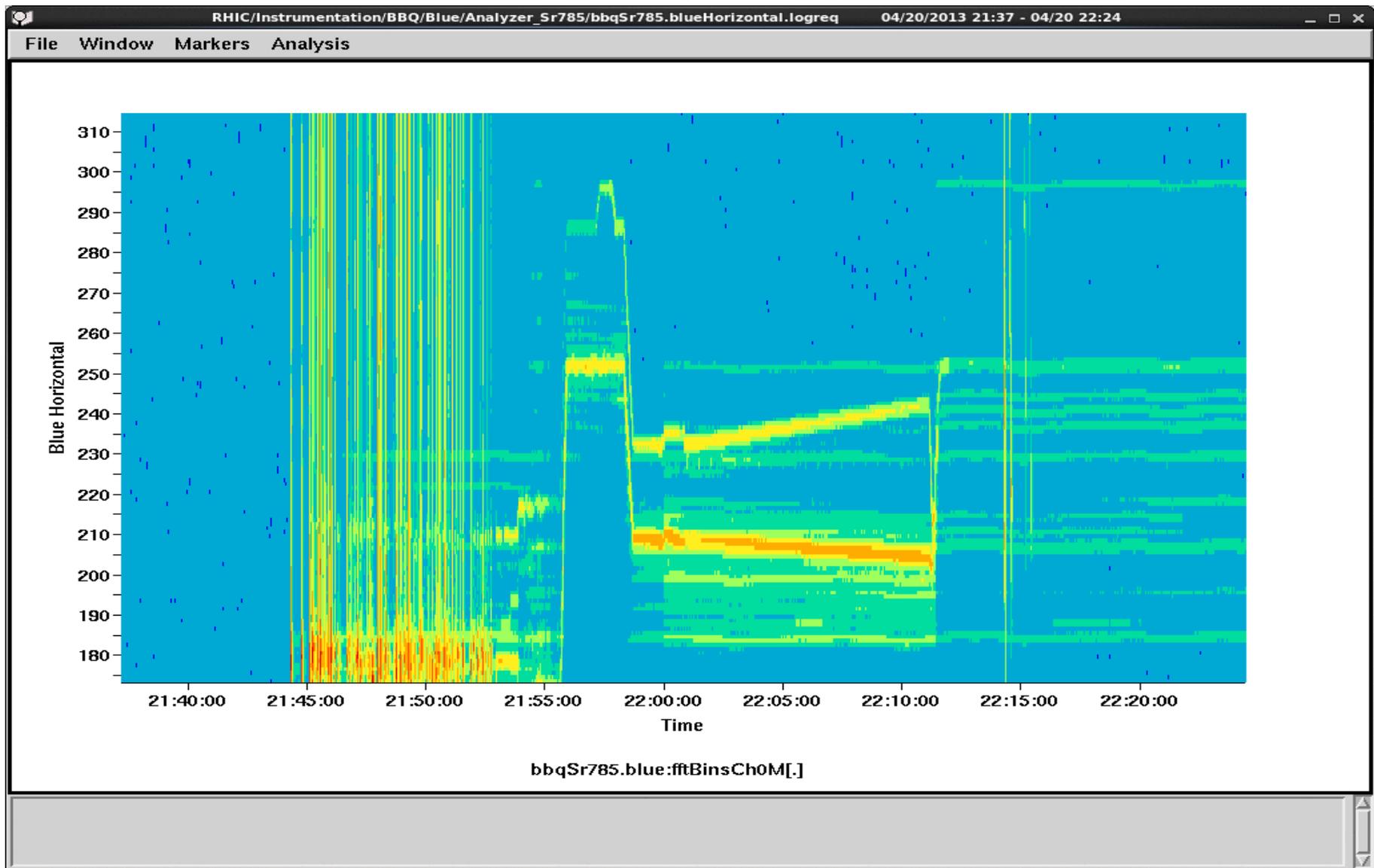
# When bunch Intensity $> 1.8/\text{bunch}$



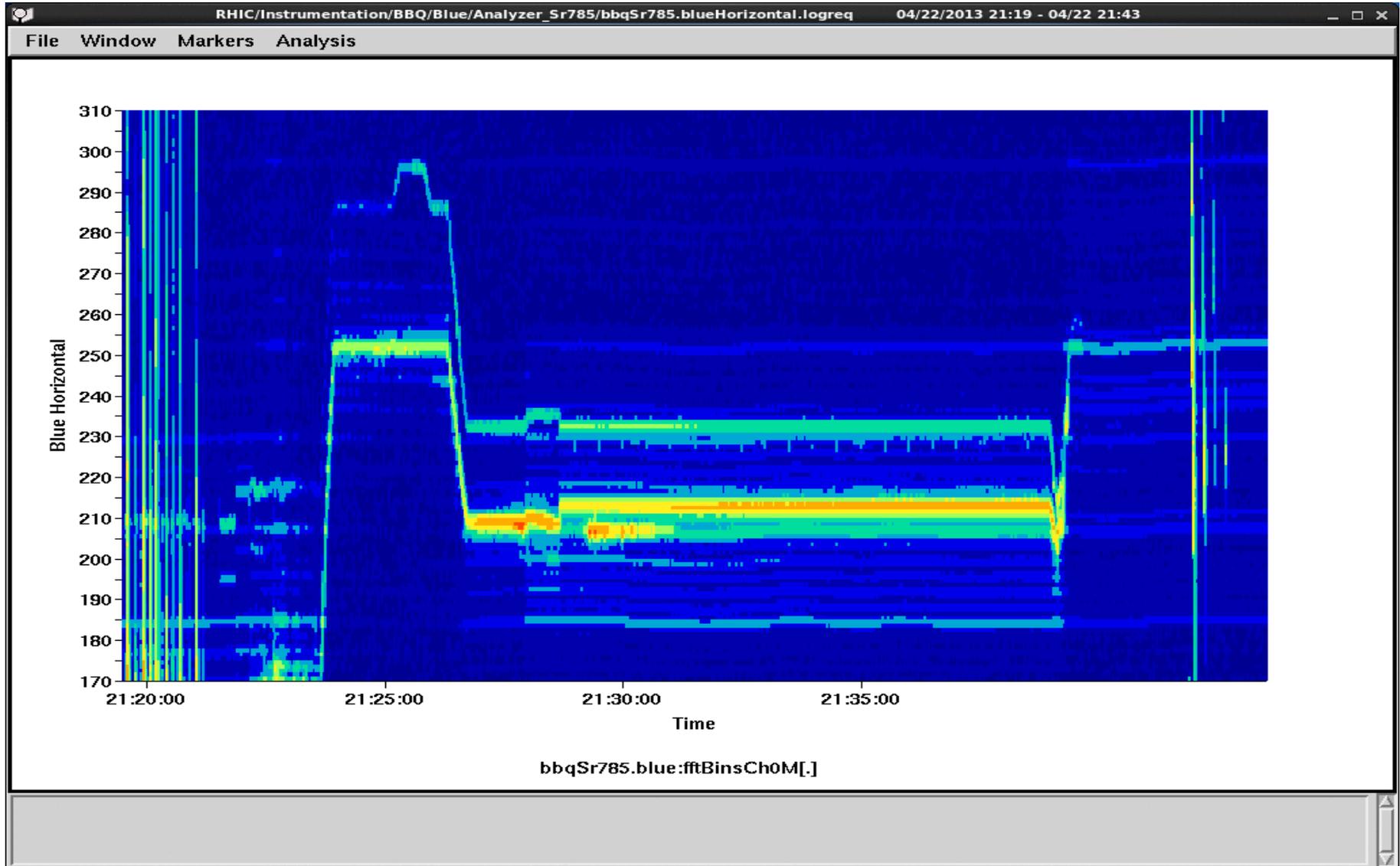
# Extra Signal in Spectrum



# Not there or weaker previous Fill >1.8/bunch



# Moves with tunes



# Future Plans

- RF reducing Landau at injection slowly and on ramp. Fixing phase issues
- Measure spin tune before and after rotator ramp.
- Replay ramp without bbq kicker
- Path to ease in new optics correction at store
- Track down and try and fix our intensity dependent growth on rotator ramp and rebucketing.
- Test Yellow e-lens phases at Store