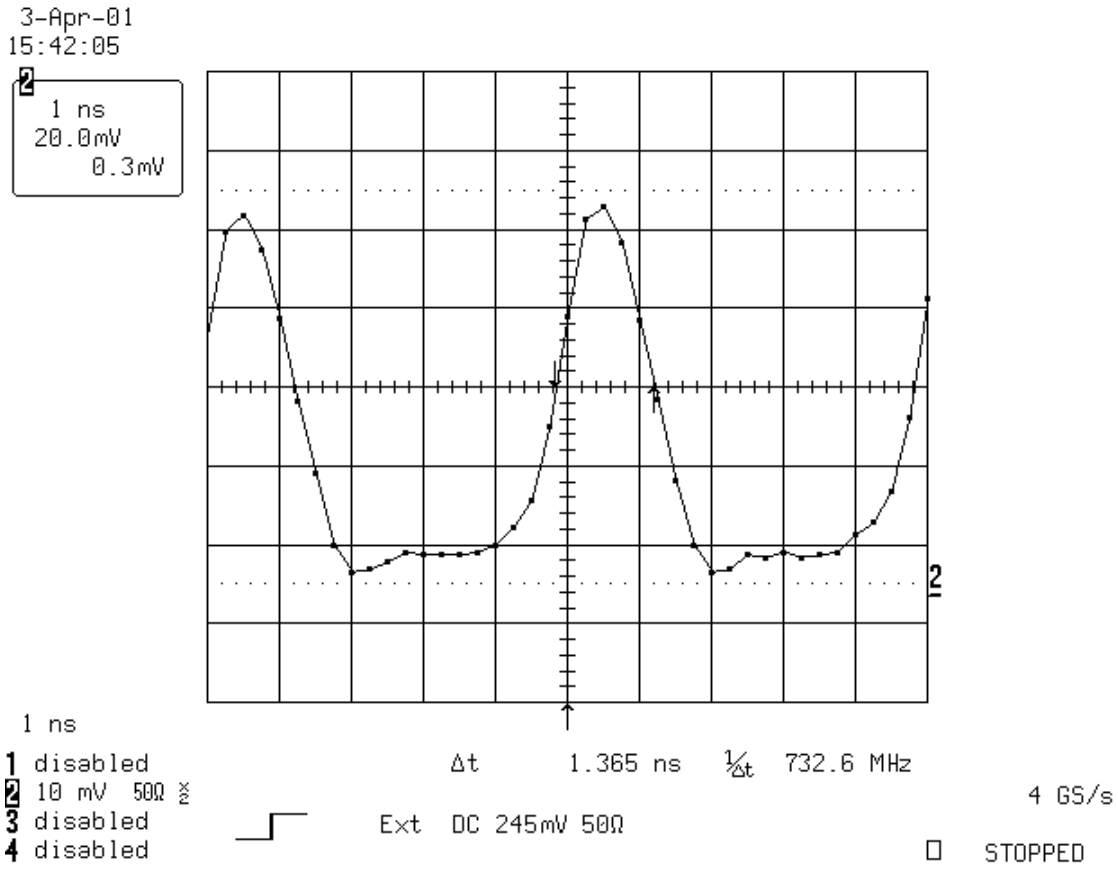
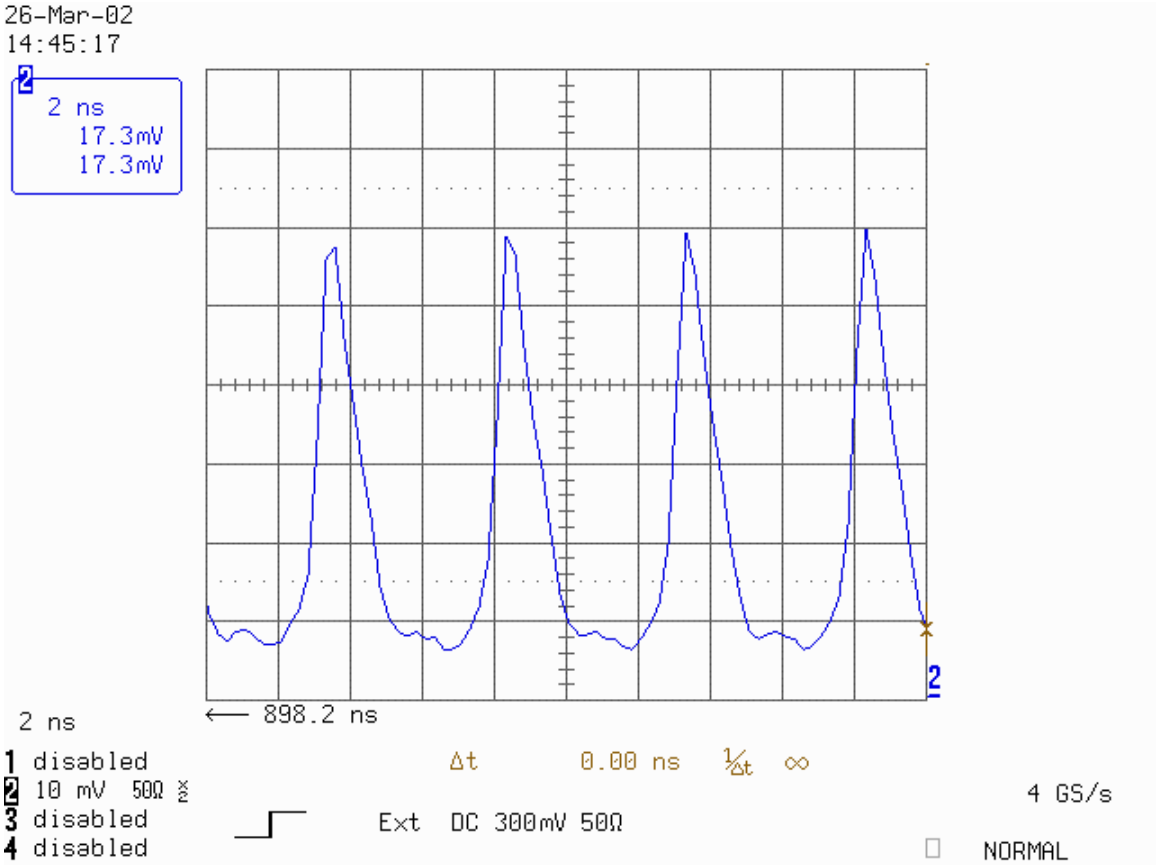
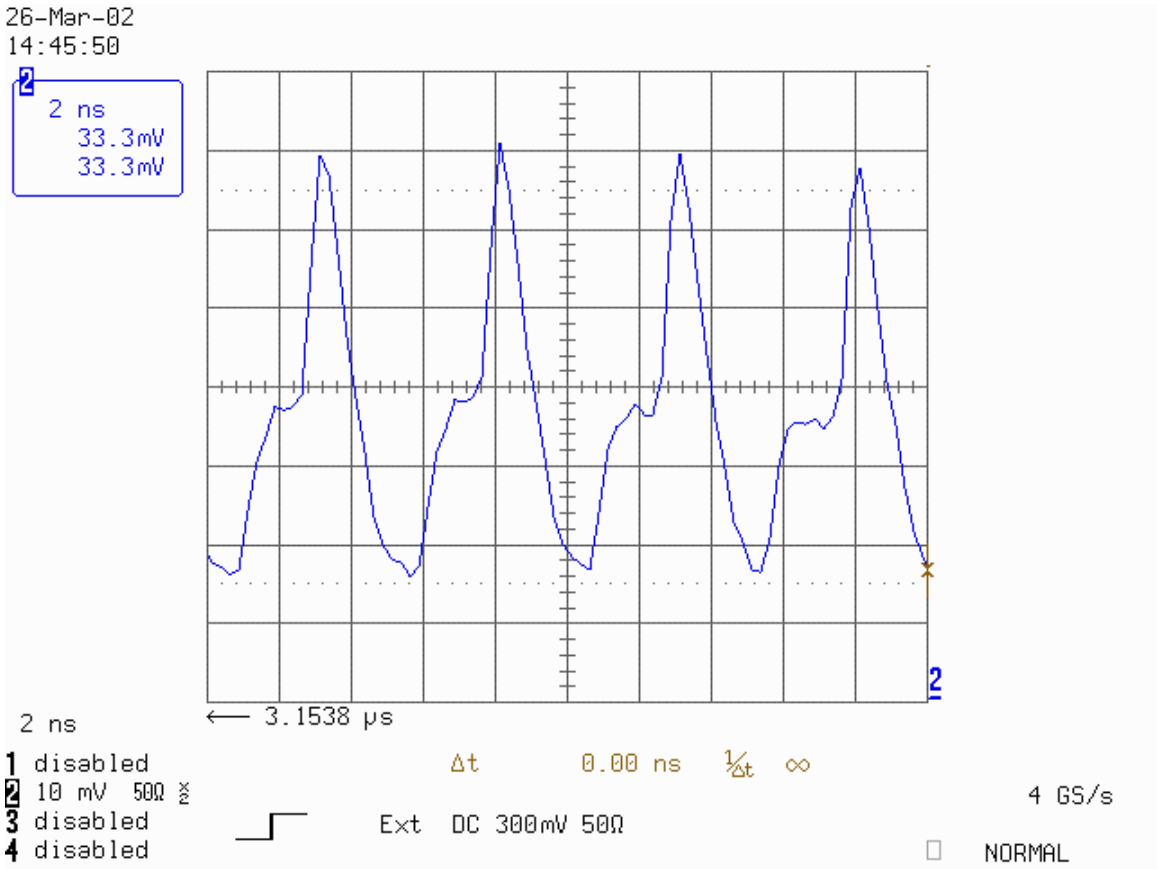
Author: Ray Tomlin
Date: April 3, 2001
Title: Booster 200 MHz bunch length, first turn at L18.



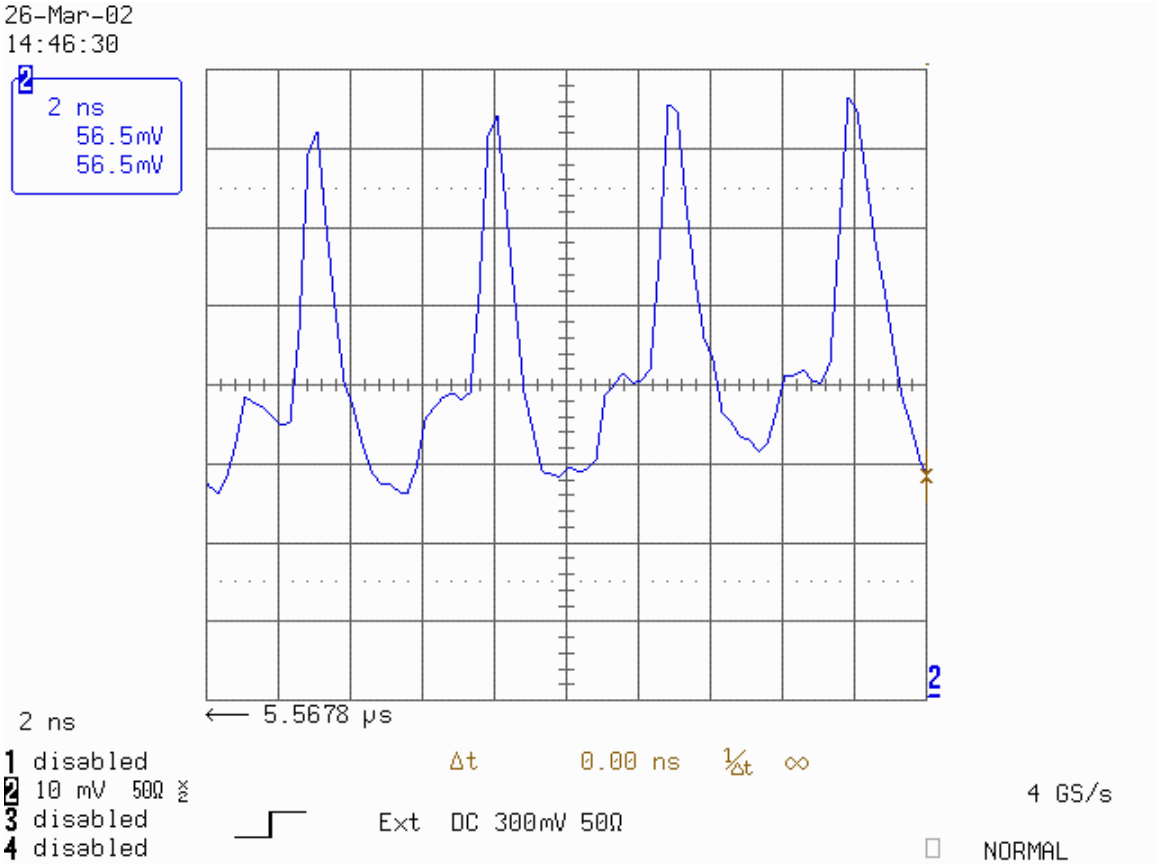
Author: Ray Tomlin
Date: March 26, 2002
Title: Booster 200 MHz bunch length, first pass at L18.



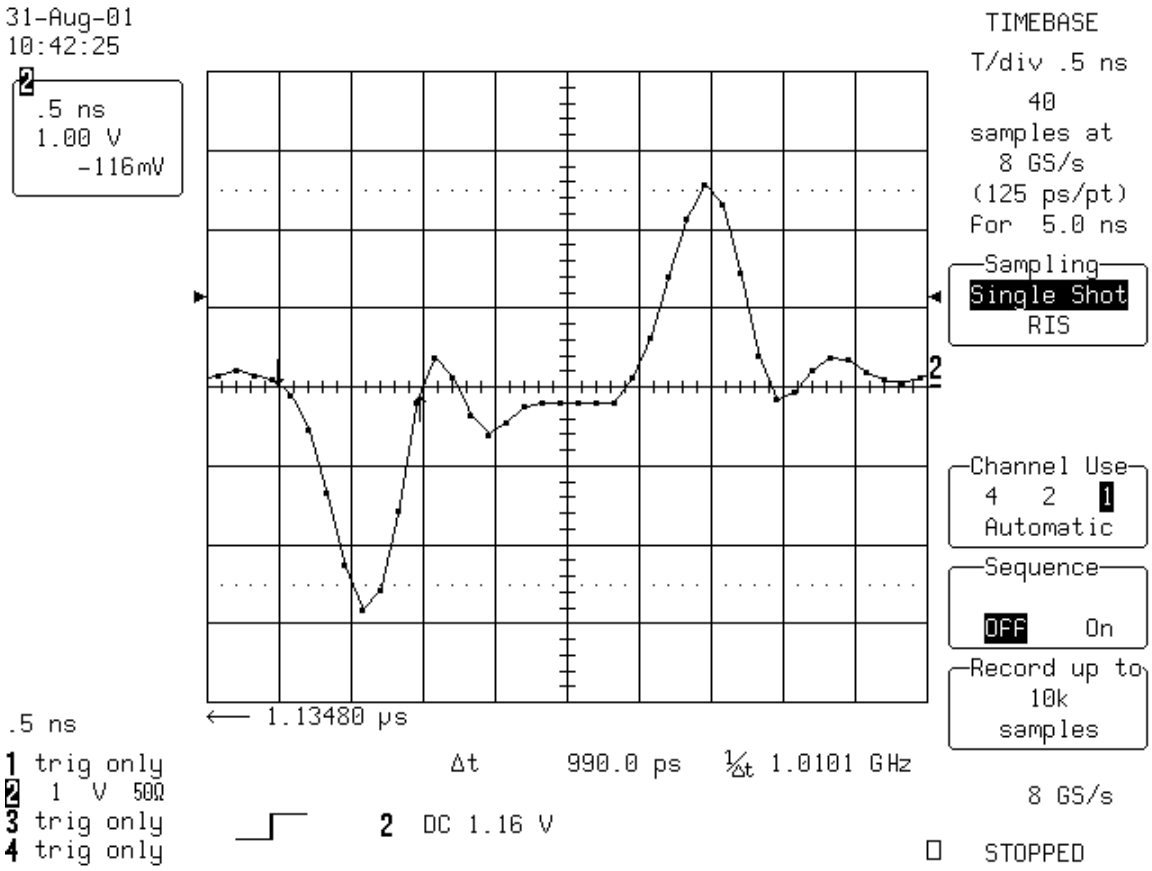
Author: Ray Tomlin
Date: March 26, 2002
Title: Booster 200 MHz bunch length, second pass at L18. (Second-turn injection added on.)



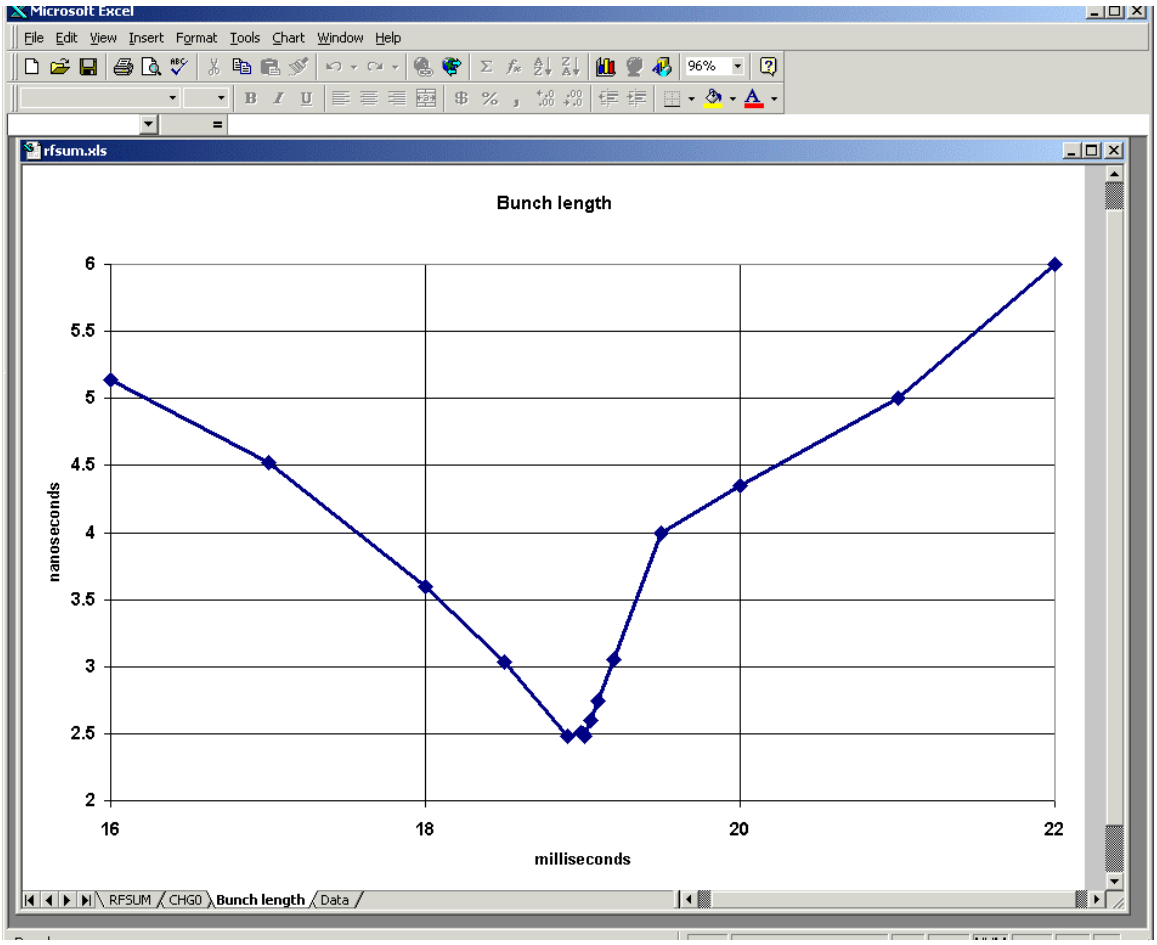
Author: Ray Tomlin
Date: March 26, 2002
Title: Booster 200 MHz bunch length, third pass at L18. (Third-turn injection added on.)



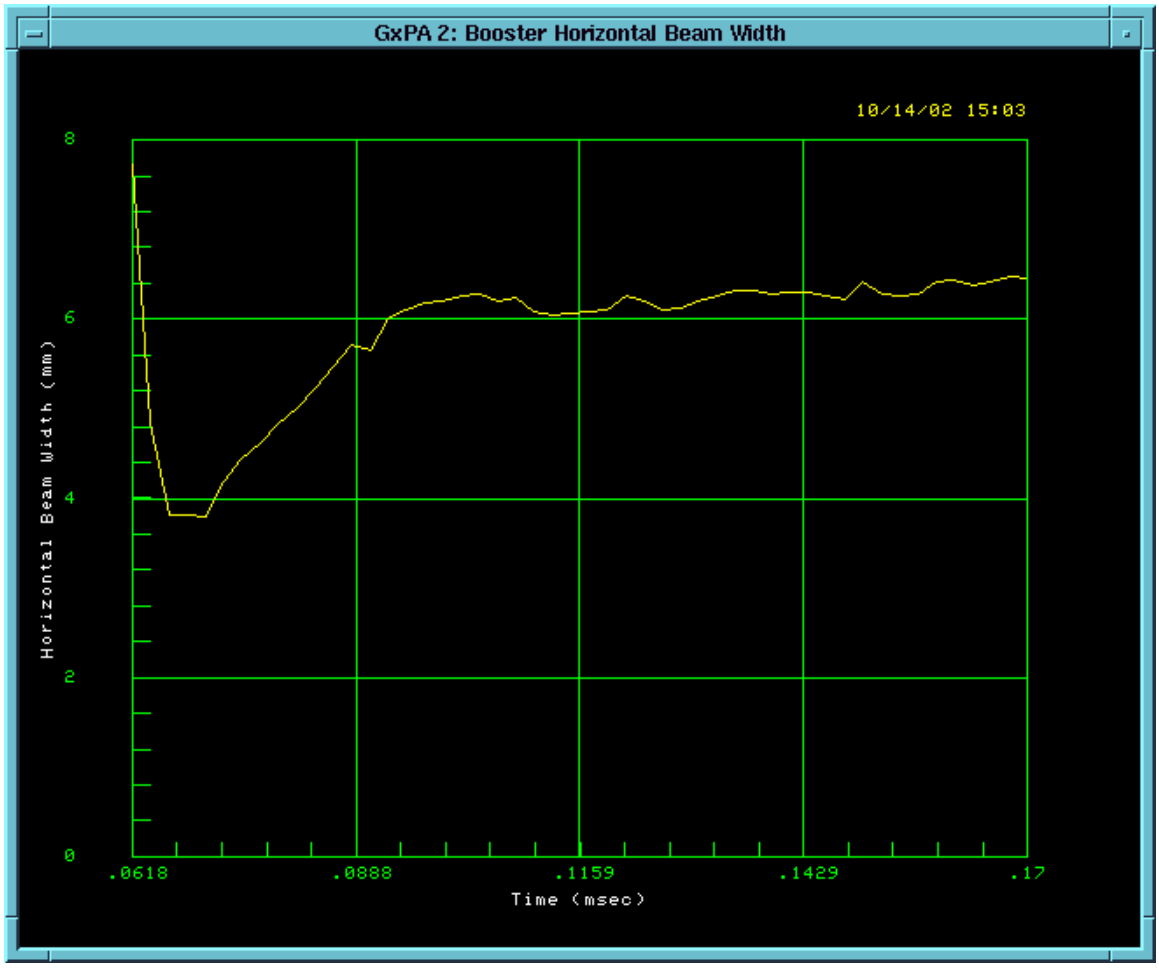
Author: Ray Tomlin
Date: August 31, 2001
Title: Linac 200 MHz bunch length, measured by the Griffin pickup upstream from the debuncher. (Actual bunch length is probably around 625 ps. The LeCroy scope blow it up to 990 ps.)

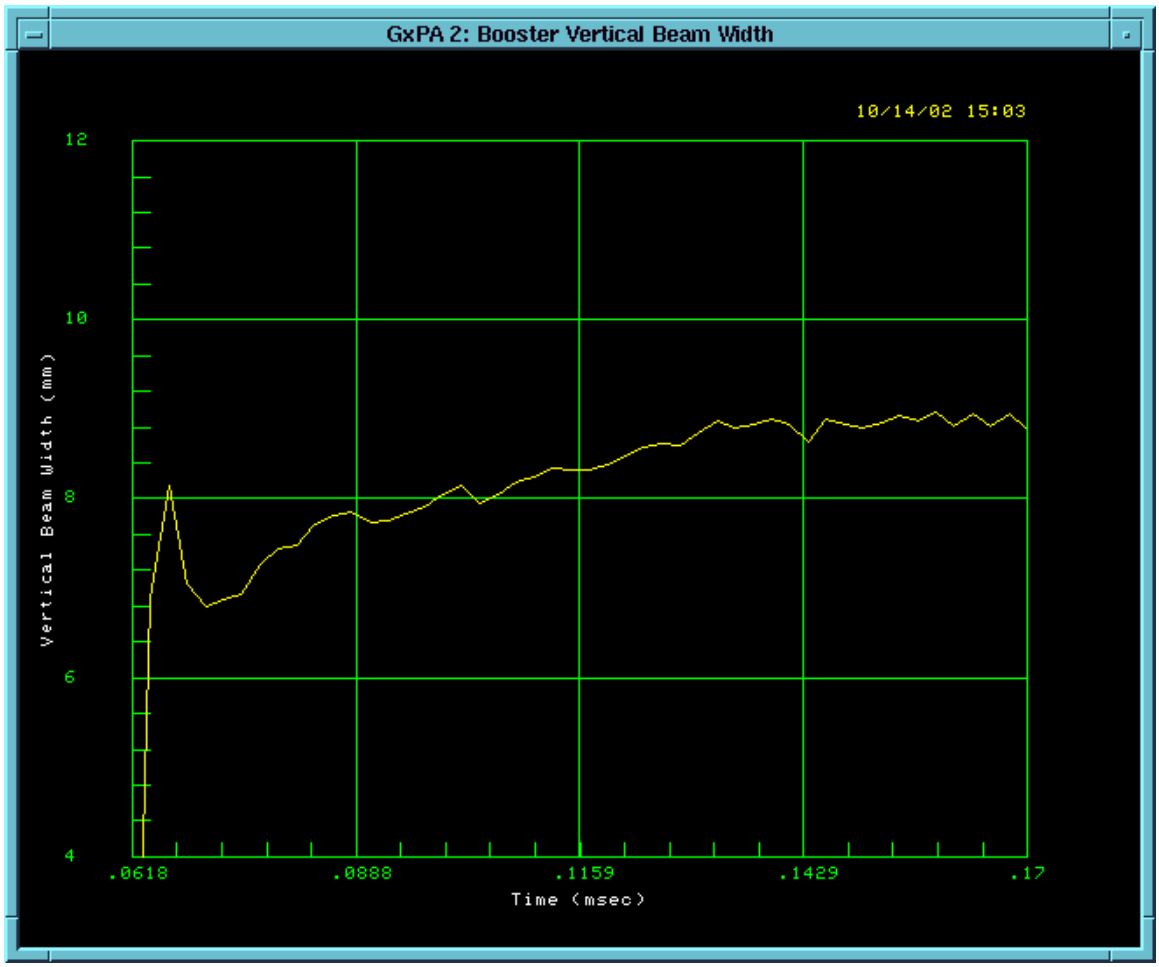


Author: Ray Tomlin
Date: October 14, 2002
Title: Booster bunch length near the transition

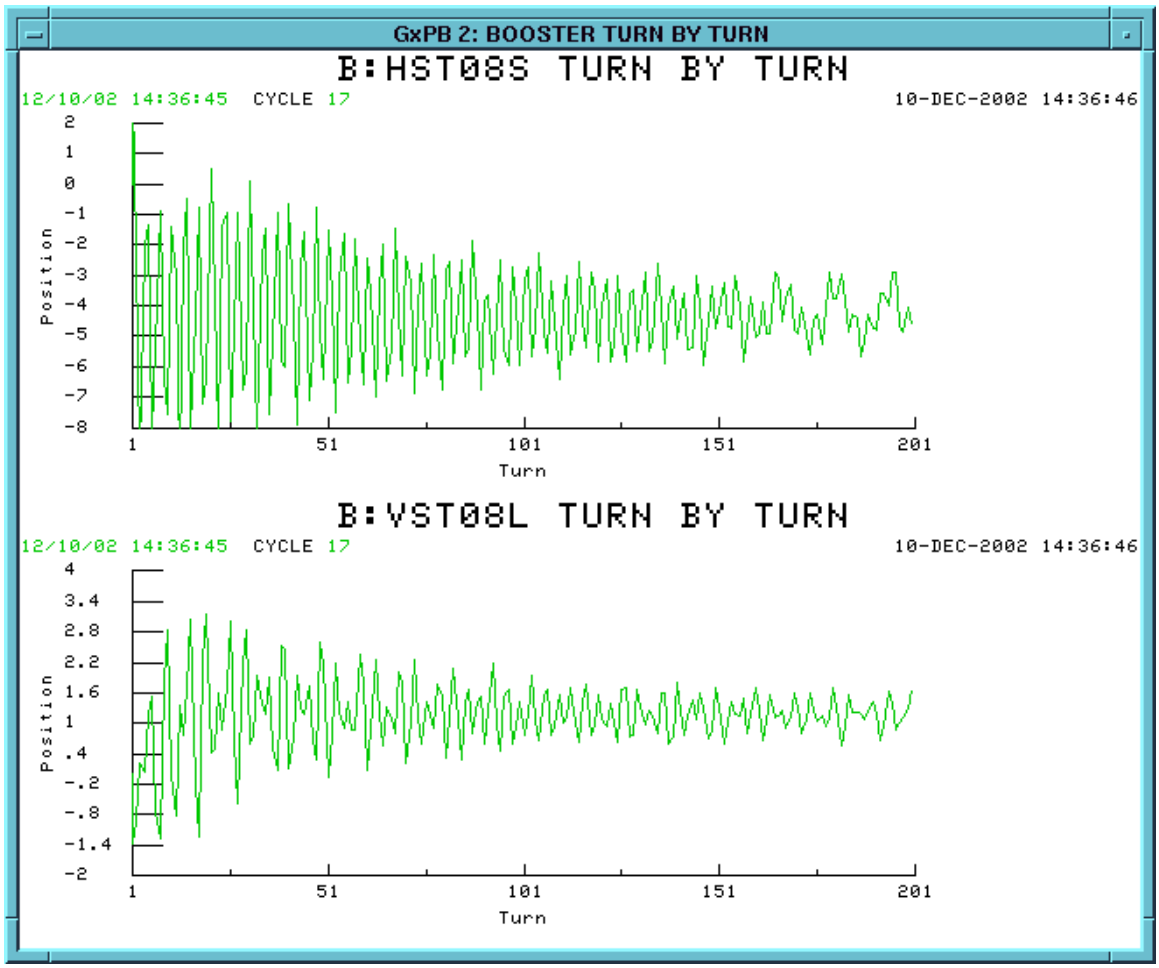


Author: Ray Tomlin
Date: October 14, 2002
Title: Booster beam width prior to the transition. IPM data. (The first turn injection is on the bottom of the horizontal data curve. There are 10 turns of injection.)

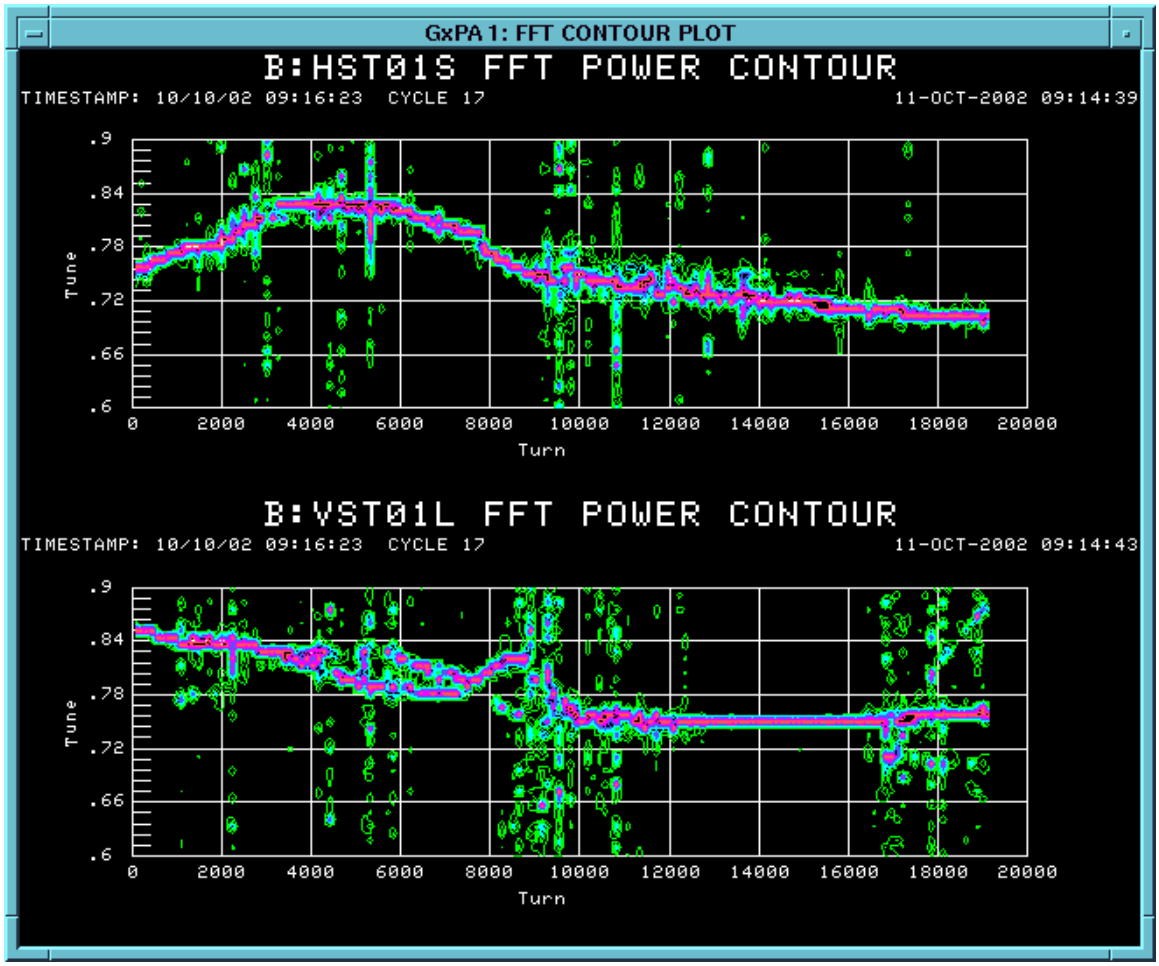



GxPA 2: Booster Vertical Beam Width
10/14/02 15:03
12
10
8
6
4
Vertical Beam Width (mm)
.0618
.0888
.1159
.1429
.17
Time (msec)

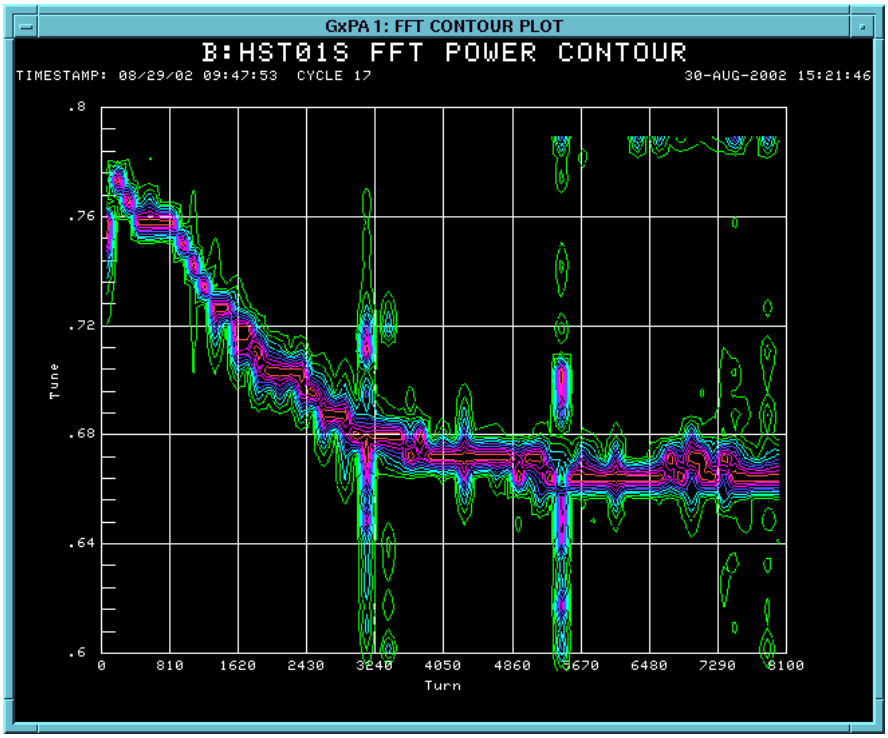
Author: Ray Tomlin
Date: December 10, 2002
Title: Injection painting by deliberately offsetting the injection point. (Horizontal painting reduces loss by about 20%. Vertical painting does not help probably due to aperture limit.)

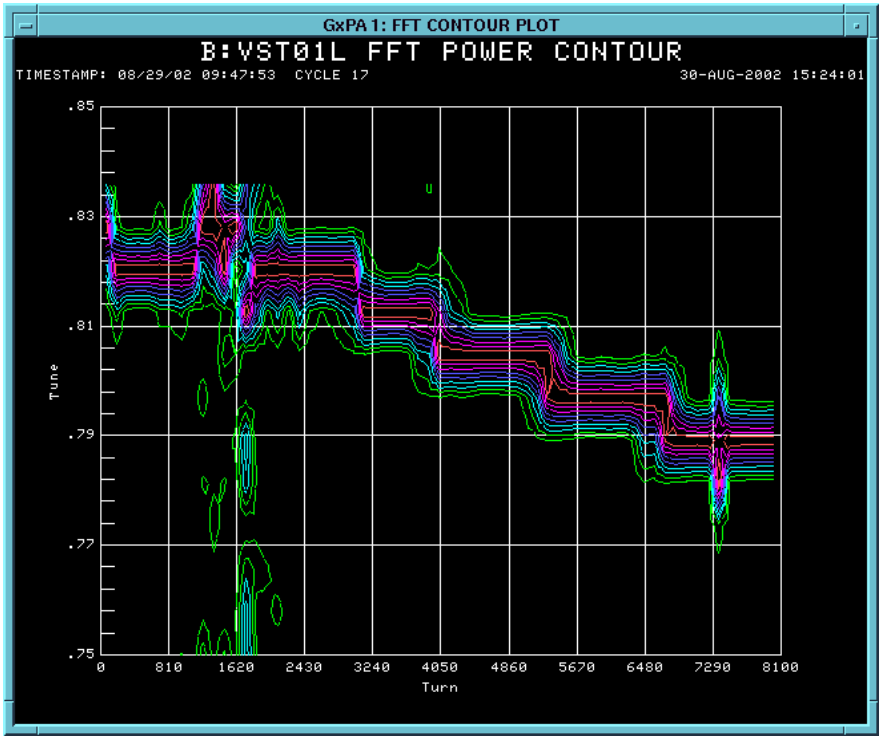


Author: Ray Tomlin
Date: October 11, 2002
Title: Booster tune throughout the cycle

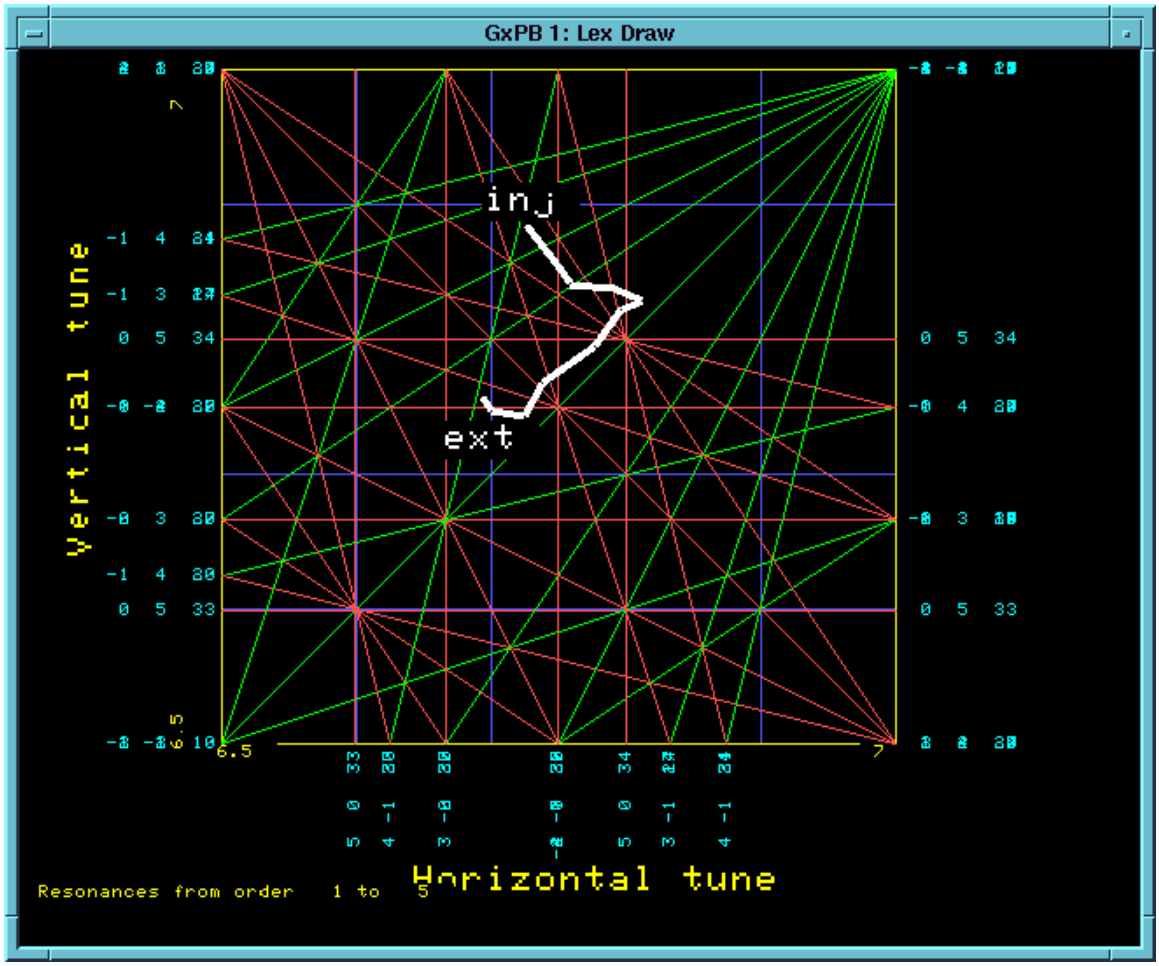


Author: Ray Tomlin
Date: August 30, 2002
Title: Booster bare tune throughout the cycle, all sextupoles OFF.

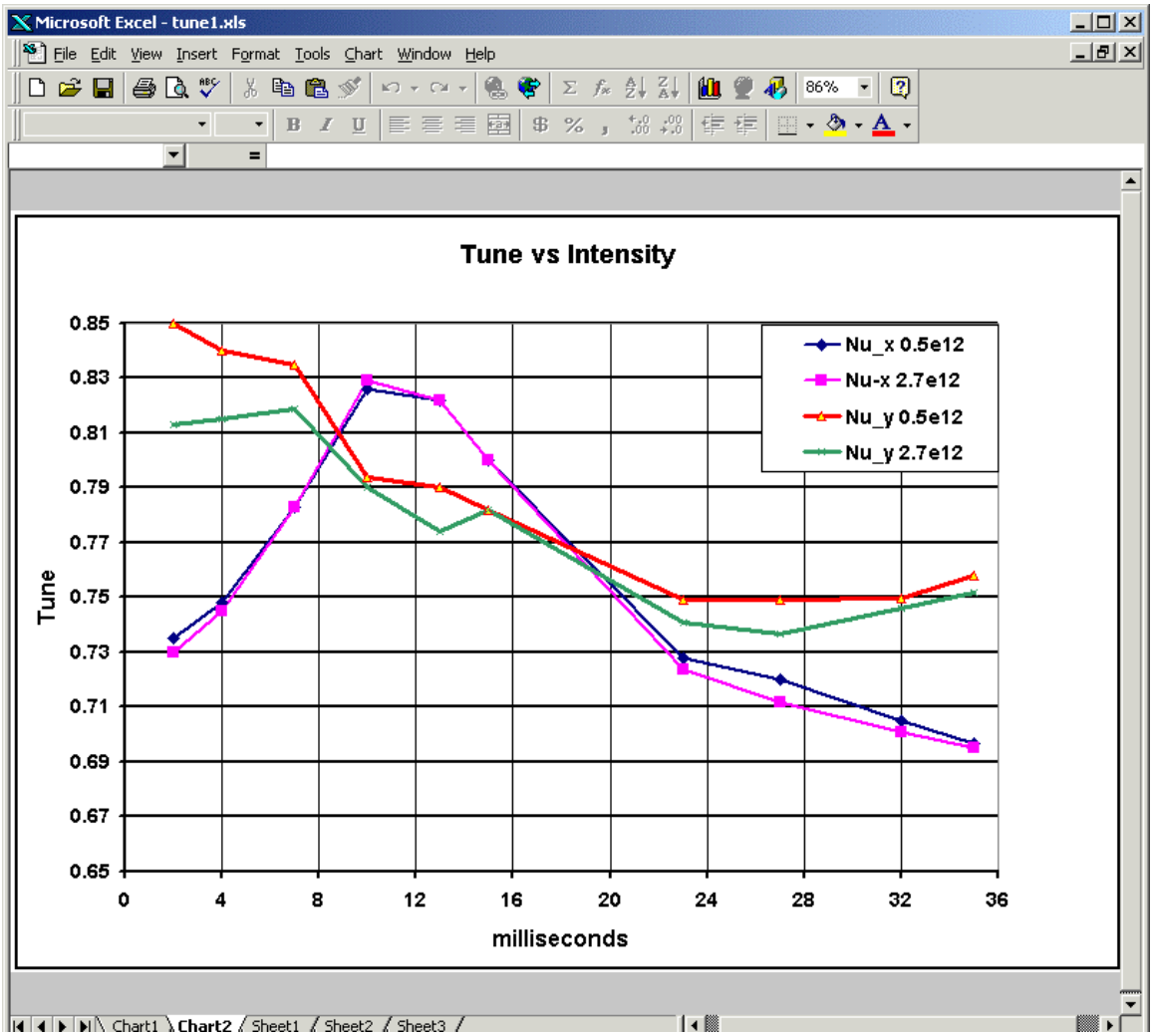




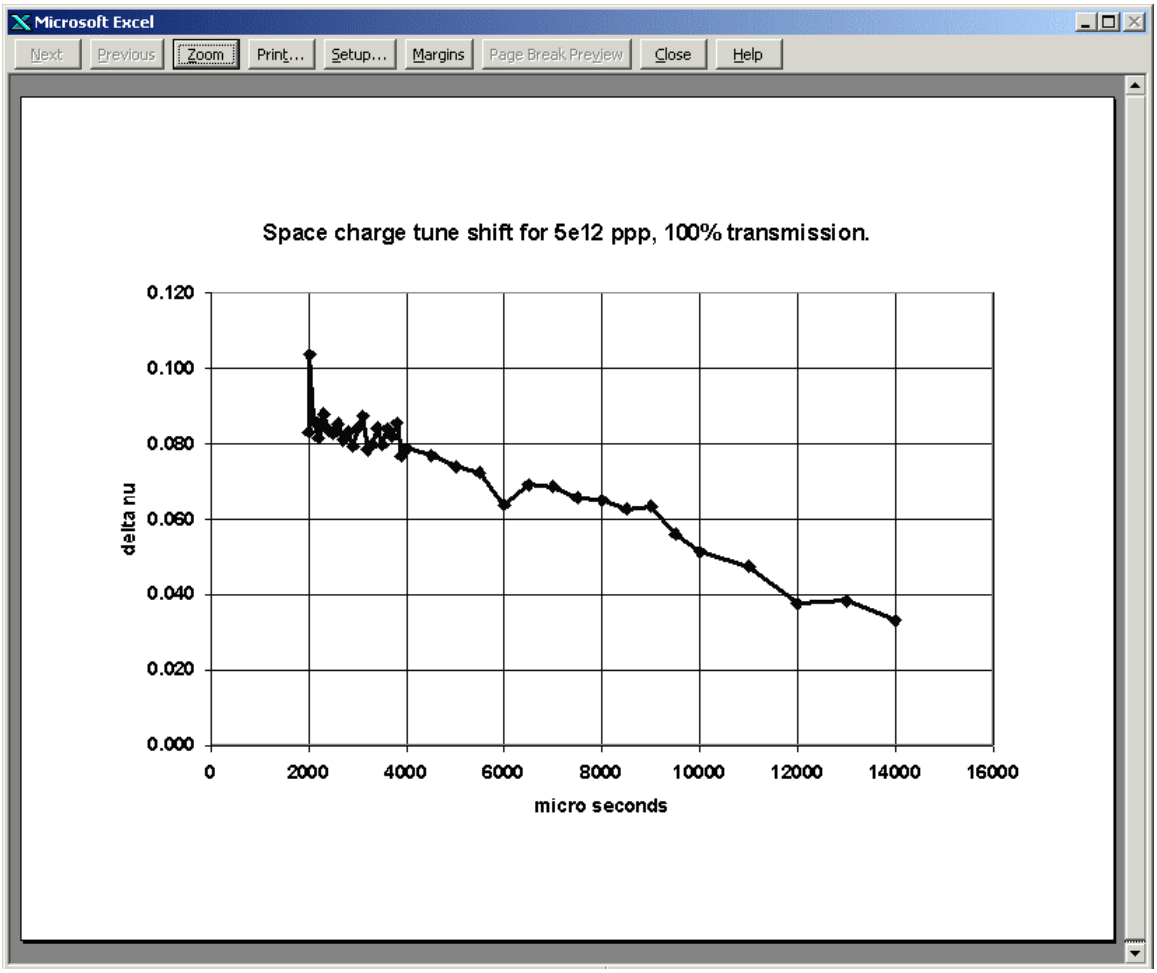
Author: Ray Tomlin
Date: October 9, 2002
Title: Booster tune diagram (tune path is for 1-turn injection, i.e., low intensity beam)



Author: Ray Tomlin
Date: Sept 30, 2002
Title: Booster tune shift with beam intensity throughout the cycle



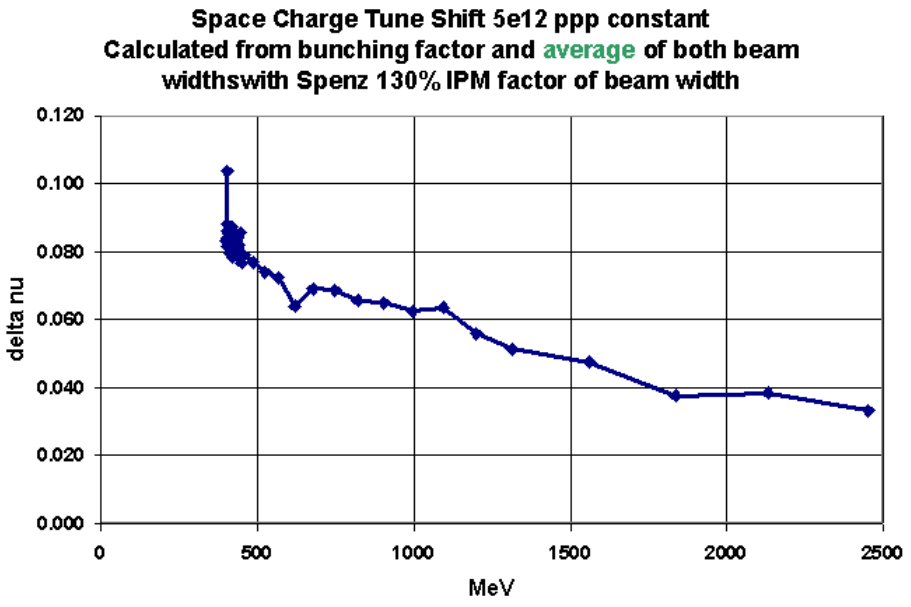
Author: Ray Tomlin
Date: December 10, 2002
Title: Booster tune shift with beam intensity throughout the cycle



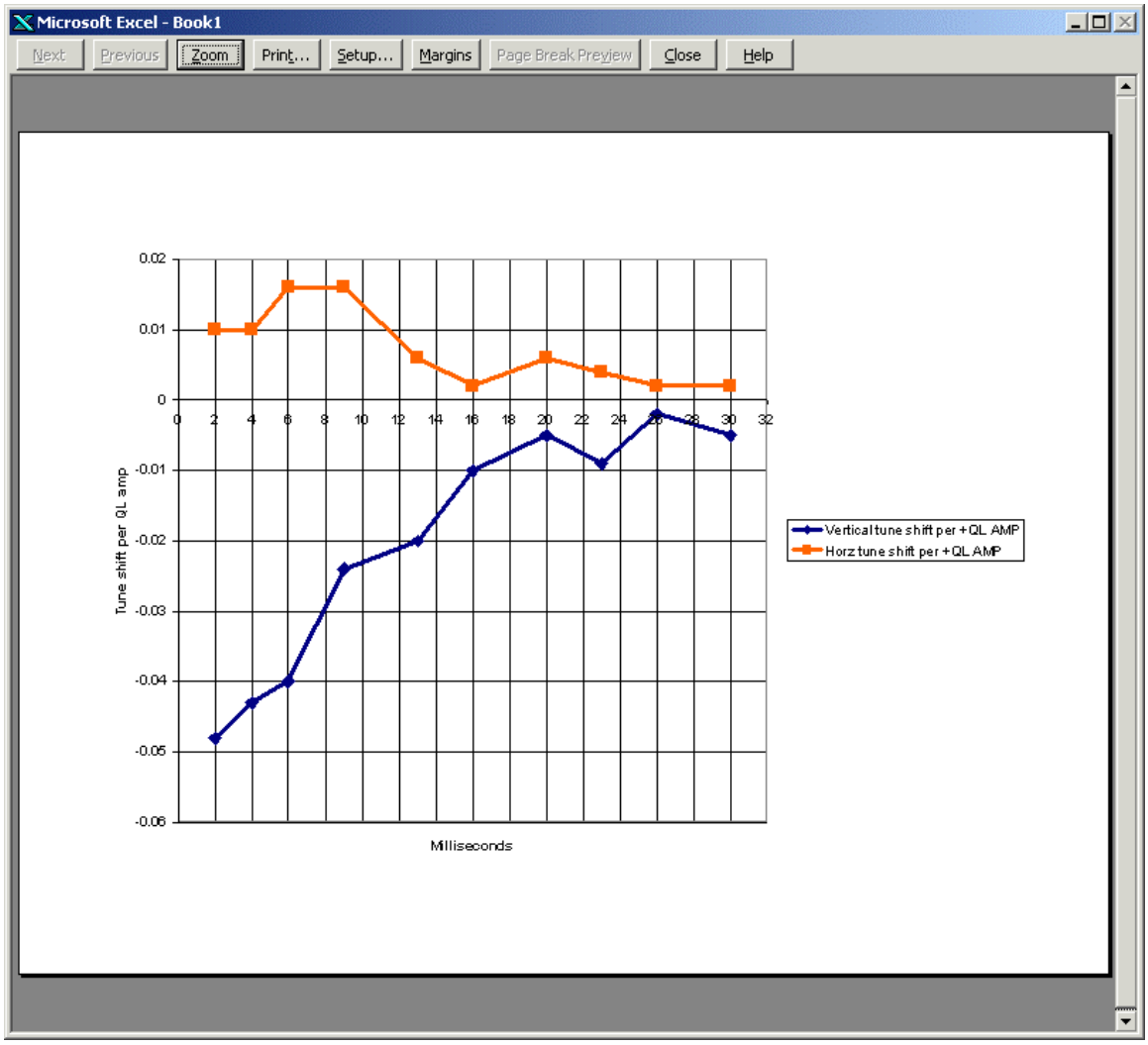
Microsoft Excel

Next | Previous | Zoom | Print... | Setup... | Margins | Page Break Preview | Close | Help

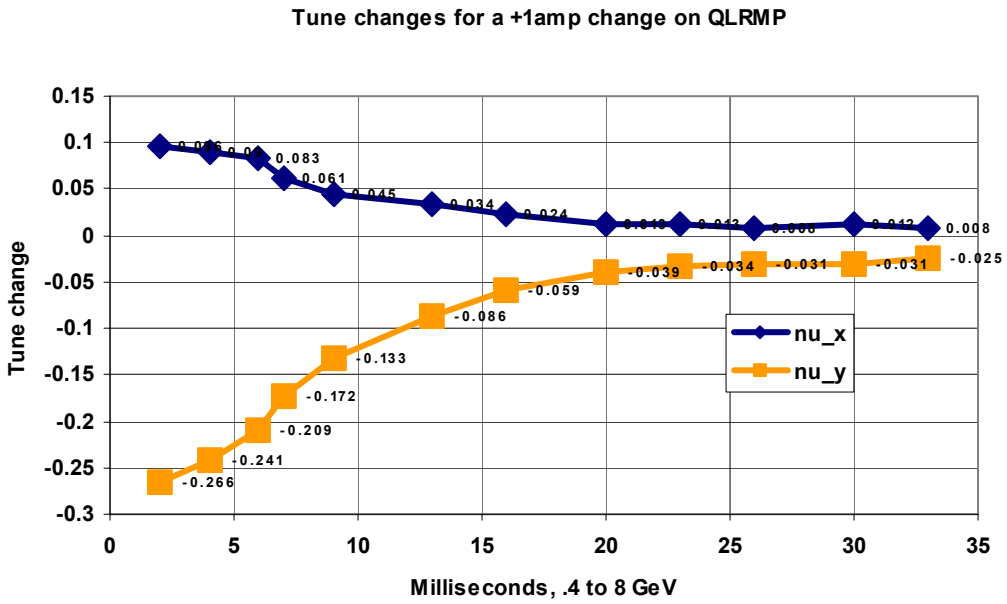
tomlin 12/10/2002

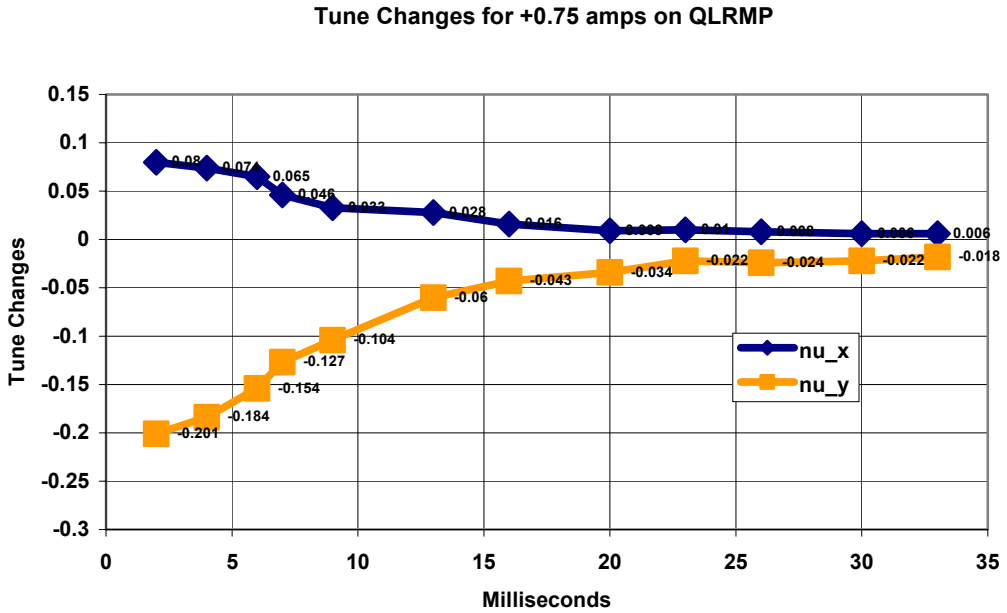


Author: Ray Tomlin
Date: October 3, 2002
Title: Booster quadrupole tuning (tune shift per unit quad current)

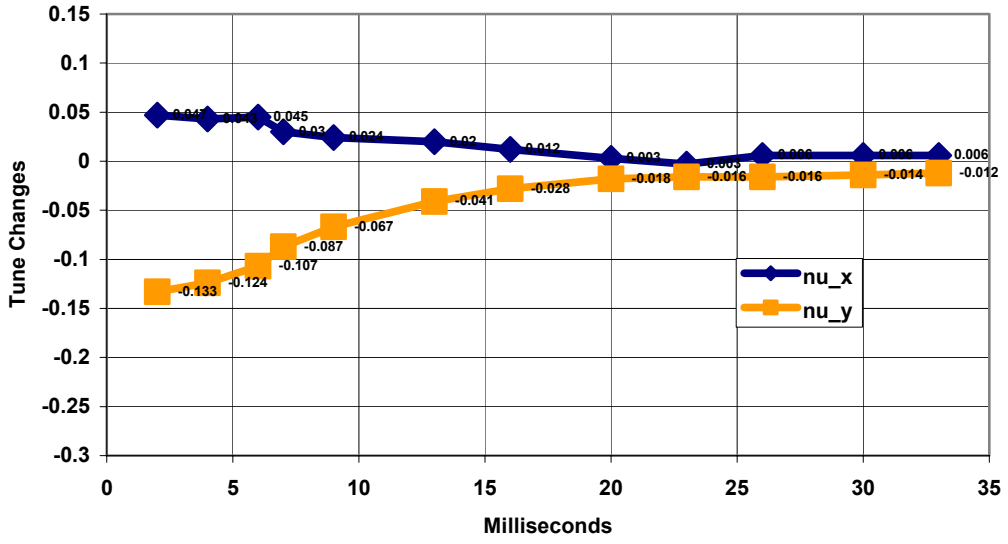


Author: Ray Tomlin
Date: October 14, 2002
Title: Booster quadrupole tuning (tune shift per unit quad current)

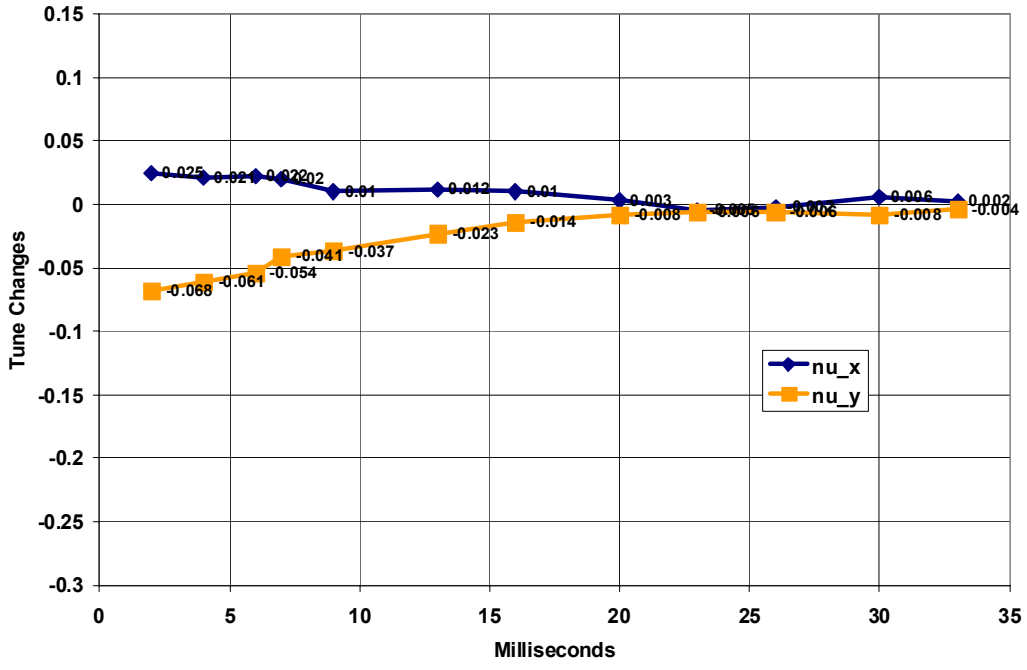




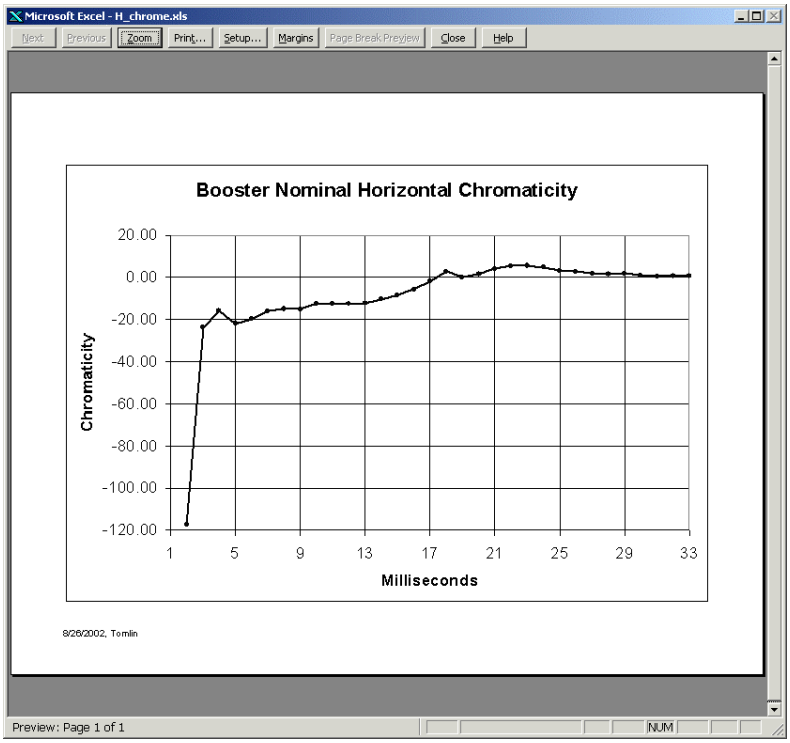
Tune Changes for +0.5 amps on QL

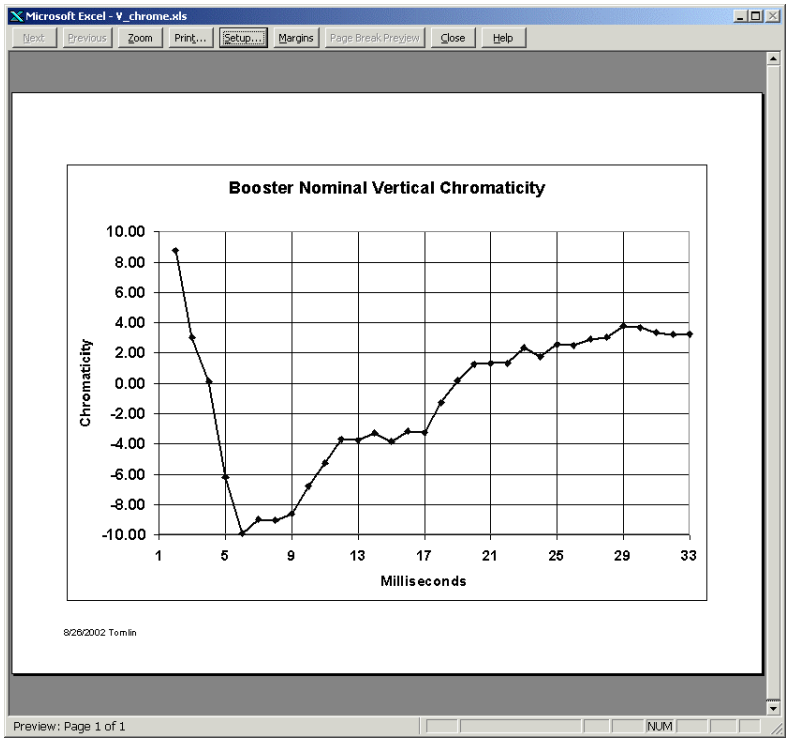


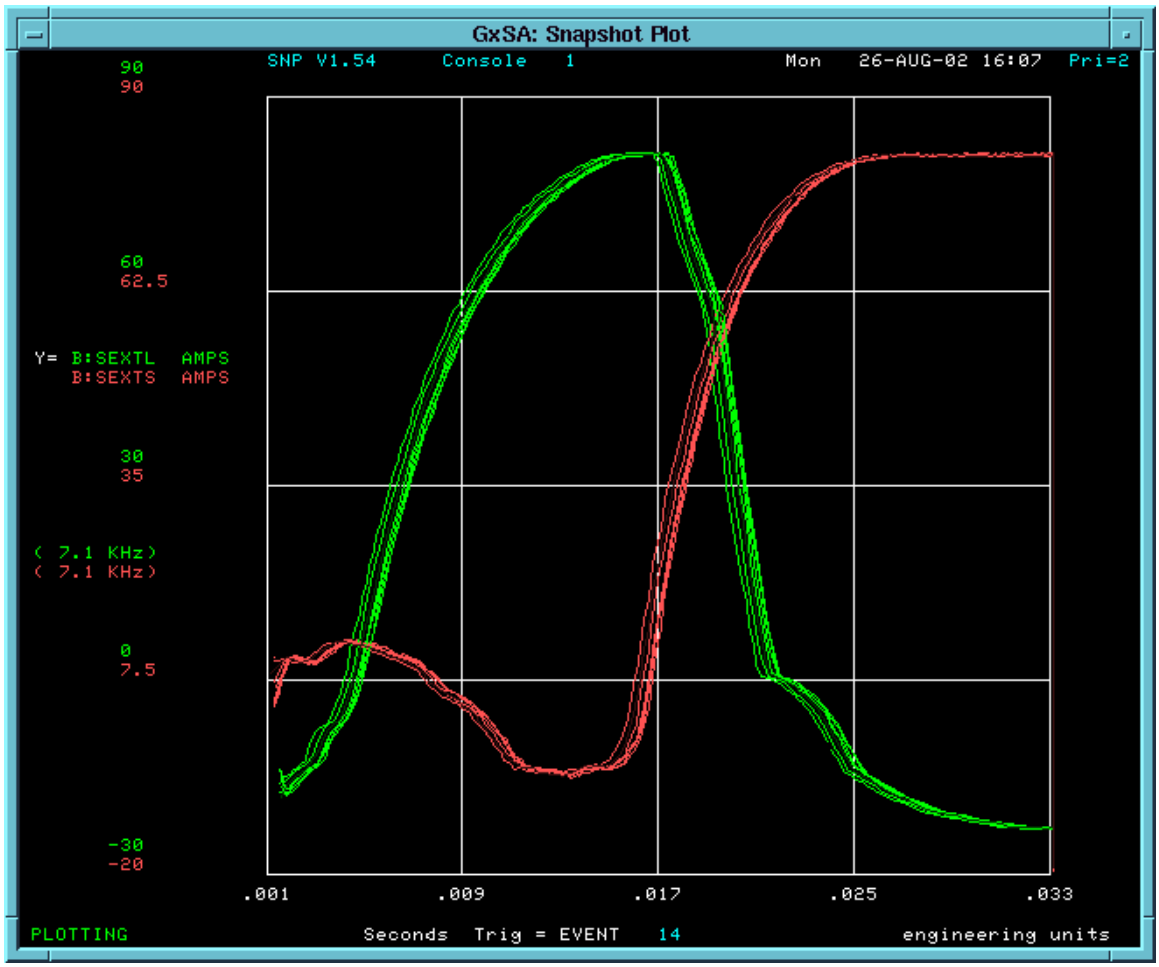
Tune Changes for +.25 amp on QL



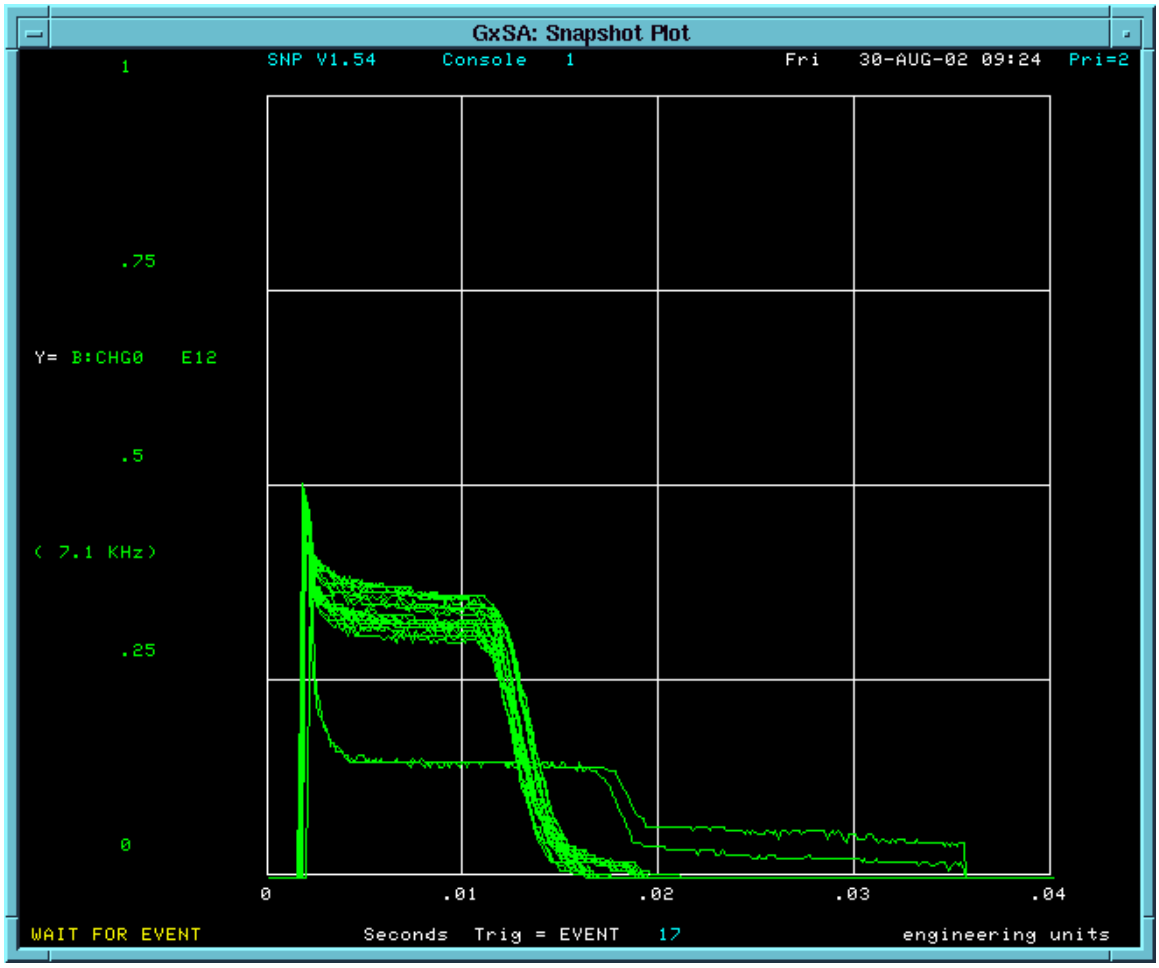
Author: Ray Tomlin
Date: August 26, 2002
Title: Booster chromaticity measurement and sextupole setting throughout the cycle. (The first data point in horizontal plane should be ignored.)

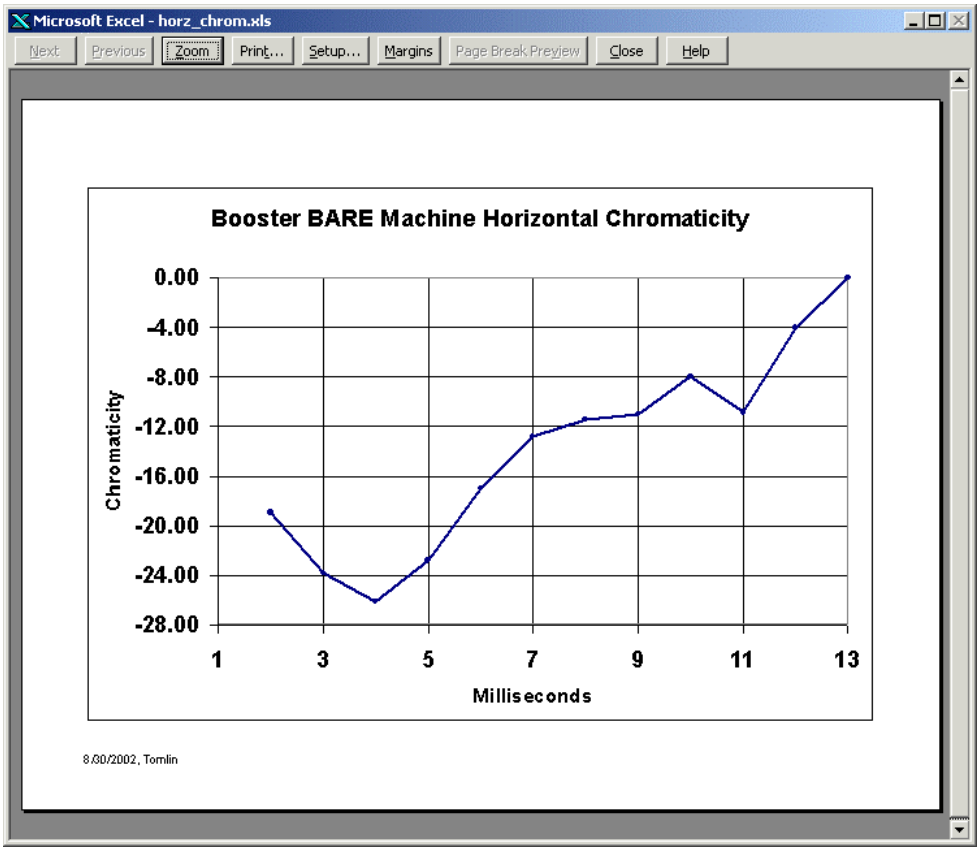


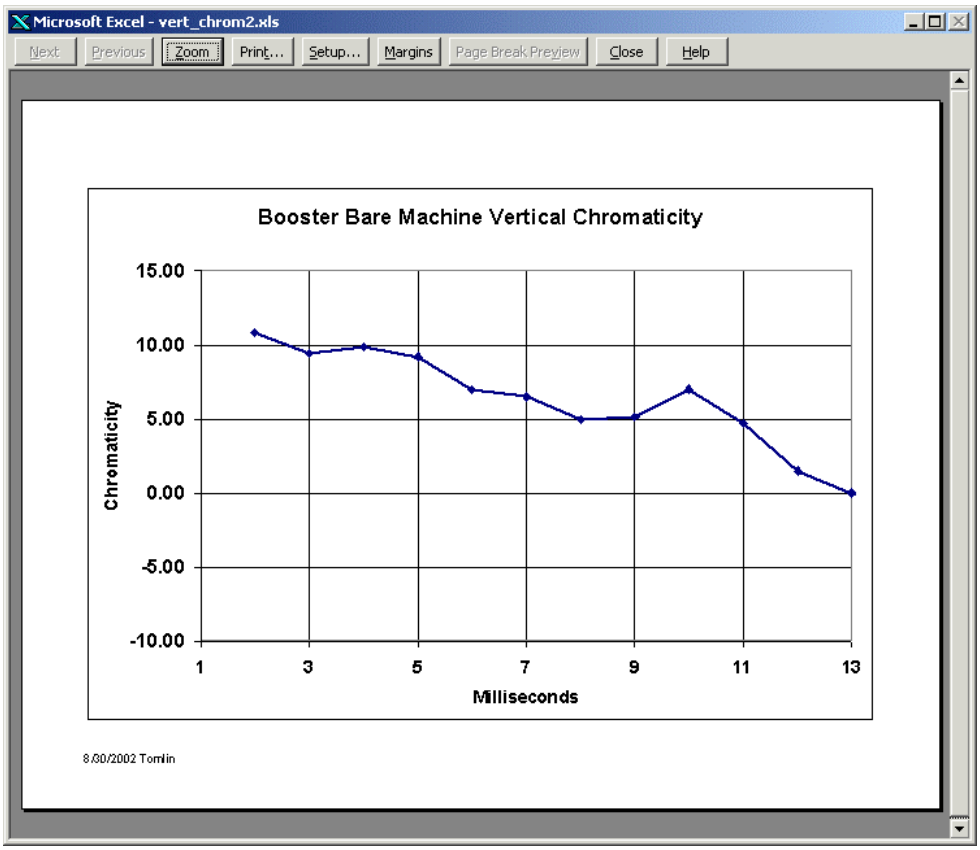



GxSA: Snapshot Plot
SNP V1.54
Console 1
Mon 26-AUG-02 16:07
Pri=2
90
90
60
62.5
Y= B:SEXTL AMPS
B:SEXTS AMPS
30
35
(7.1 KHz)
(7.1 KHz)
0
7.5
-30
-20
.001
.009
.017
.025
.033
PLOTTING
Seconds Trig = EVENT 14
engineering units

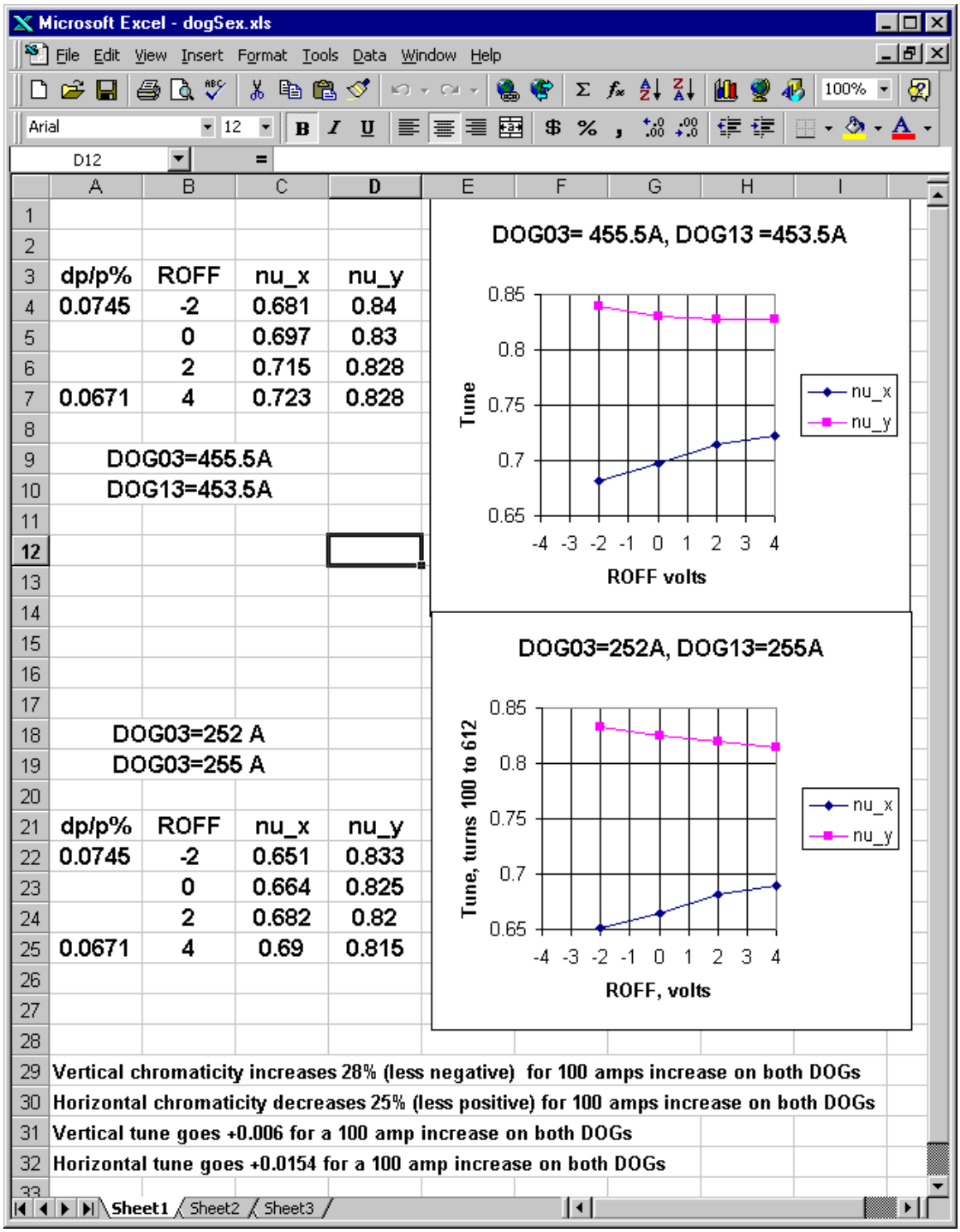
Author: Ray Tomlin
Date: January10, 2002
Title: Booster chromaticity measurement with all sextupoles OFF. (Beam cannot survive beyond 13 ms.)




Microsoft Excel - horz_chrom.xls
Next
Previous
Zoom
Print...
Setup...
Margins
Page Break Preview
Close
Help
Booster BARE Machine Horizontal Chromaticity
0.00
-4.00
-8.00
-12.00
-16.00
-20.00
-24.00
-28.00
Chromaticity
1
3
5
7
9
11
13
Milliseconds
8/30/2002, Tomlin


Microsoft Excel - vert_chrom2.xls
Next
Previous
Zoom
Print...
Setup...
Margins
Page Break Preview
Close
Help
Booster Bare Machine Vertical Chromaticity
15.00
10.00
5.00
0.00
-5.00
-10.00
Chromaticity
1
3
5
7
9
11
13
Milliseconds
8/30/2002 Tomlin

Author: Ray Tomlin
Date: January10, 2002
Title: Booster chromaticity measurement at injection, with all sextupoles OFF. (It is seen that the dogleg effect is small - No apparent change in chromaticity when the dogleg current is changed by 200 A.)



dp/p%	ROFF	nu_x	nu_y
0.0745	-2	0.681	0.84
	0	0.697	0.83
	2	0.715	0.828
0.0671	4	0.723	0.828

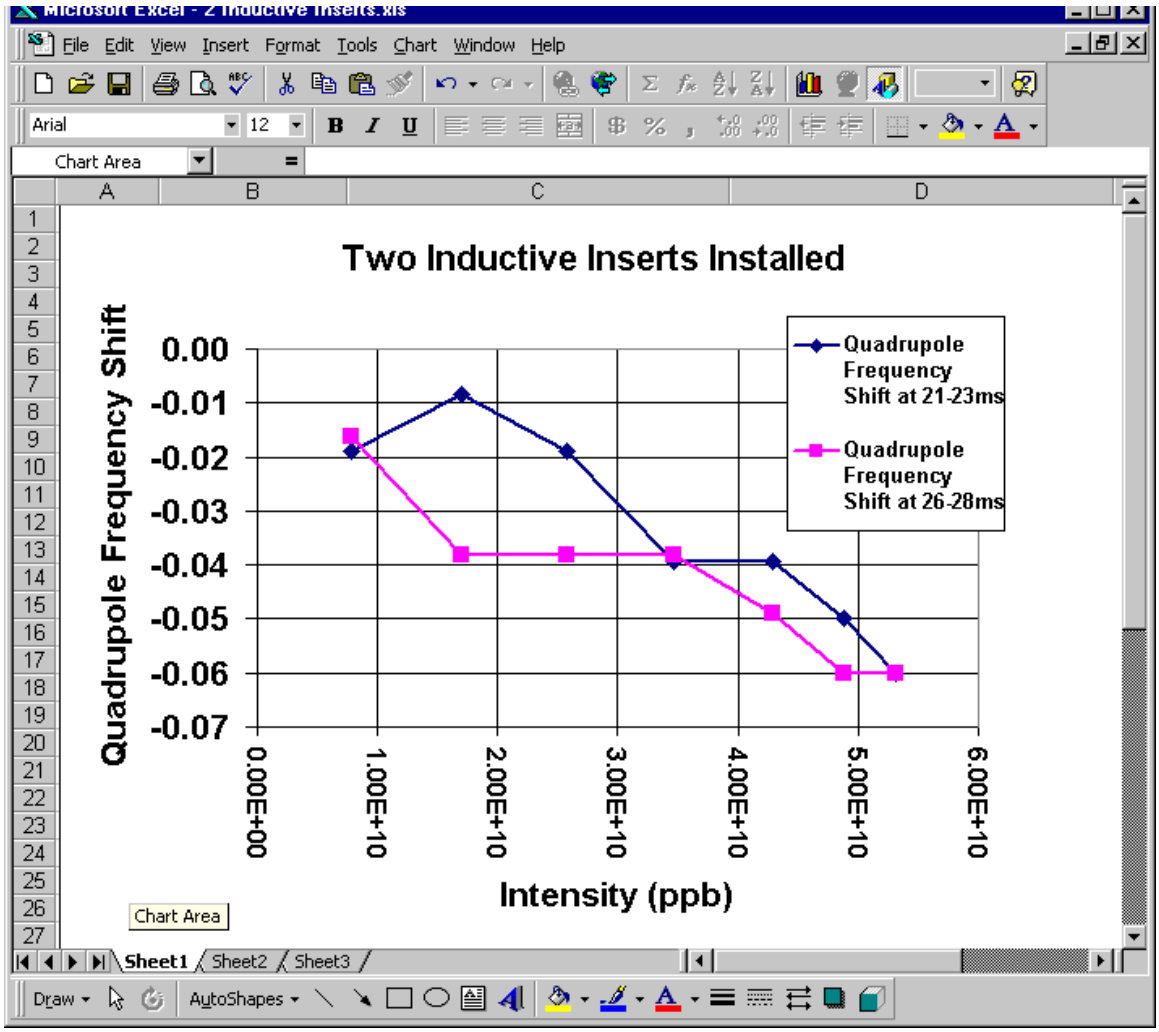
DOG03=455.5A
DOG13=453.5A

DOG03=252 A
DOG03=255 A

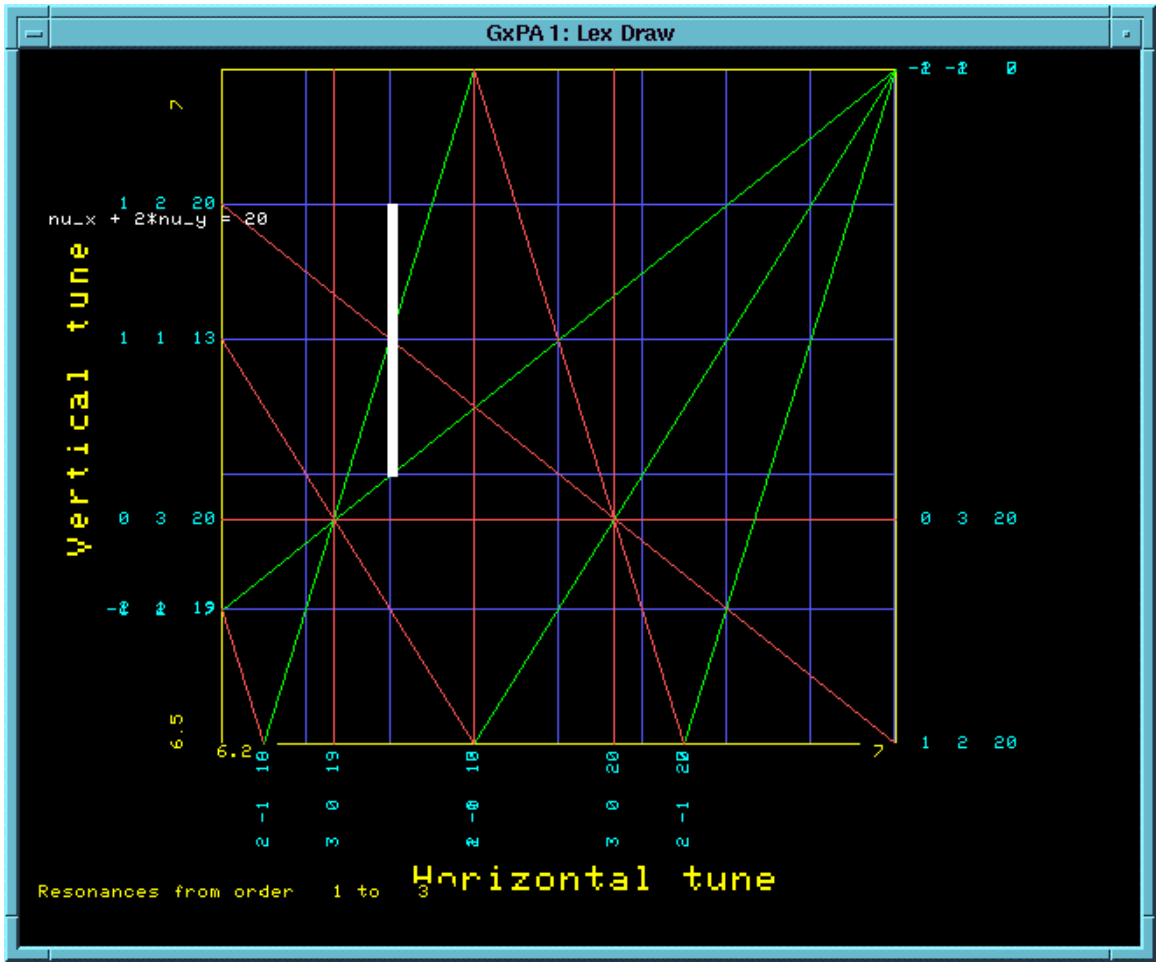
dp/p%	ROFF	nu_x	nu_y
0.0745	-2	0.651	0.833
	0	0.664	0.825
	2	0.682	0.82
0.0671	4	0.69	0.815

Vertical chromaticity increases 28% (less negative) for 100 amps increase on both DOGs
Horizontal chromaticity decreases 25% (less positive) for 100 amps increase on both DOGs
Vertical tune goes +0.006 for a 100 amp increase on both DOGs
Horizontal tune goes +0.0154 for a 100 amp increase on both DOGs

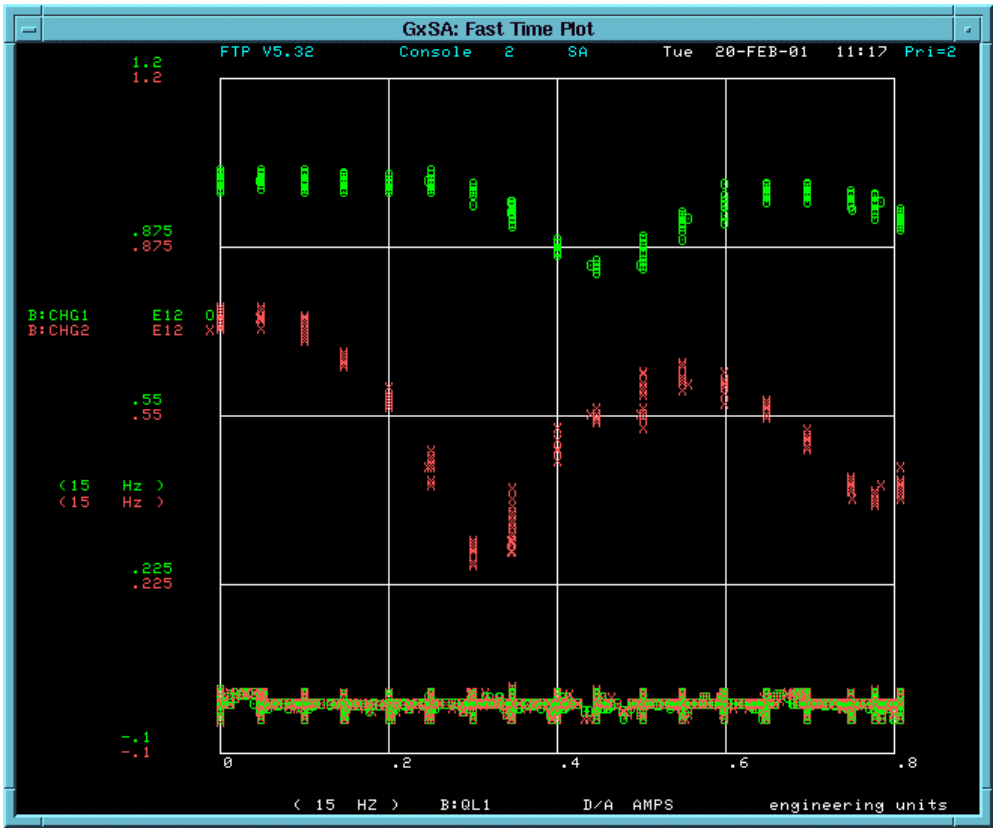
Author: Ray Tomlin
Date: May 31, 2002
Title: Booster beam longitudinal quadrupole frequency shift as a function of beam intensity. (Two inductive insert modules are in place.)

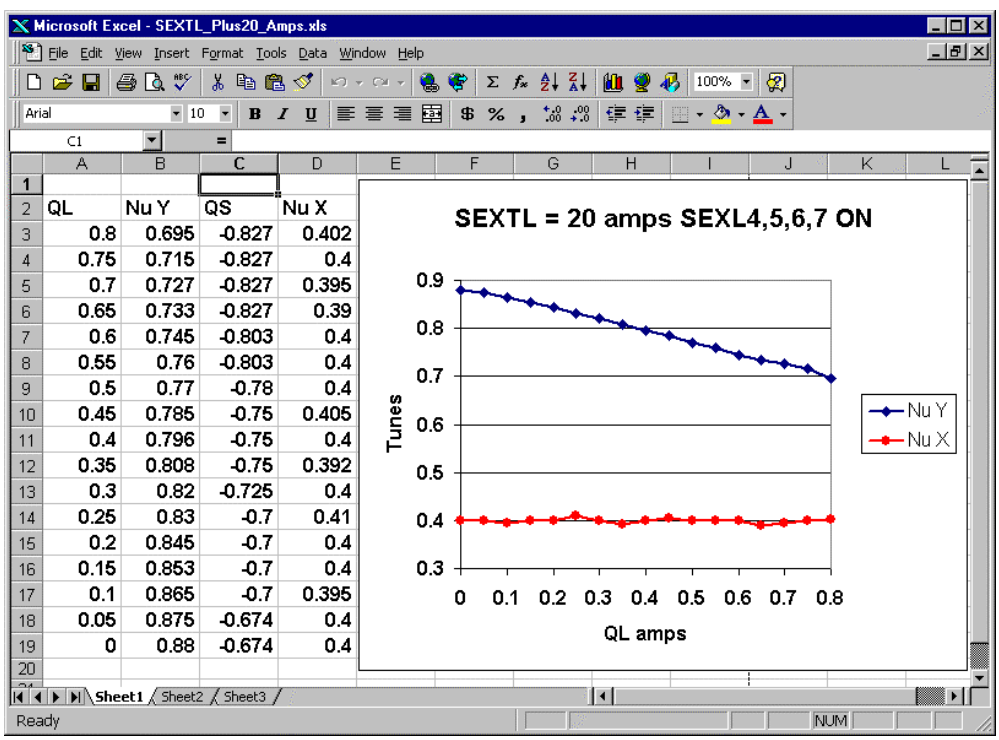


Author: Ray Tomlin, Chuck Ankenbrandt
Date: February 20, 2001
Title: Booster stopband nu_x + 2*nu_y = 20 measurement



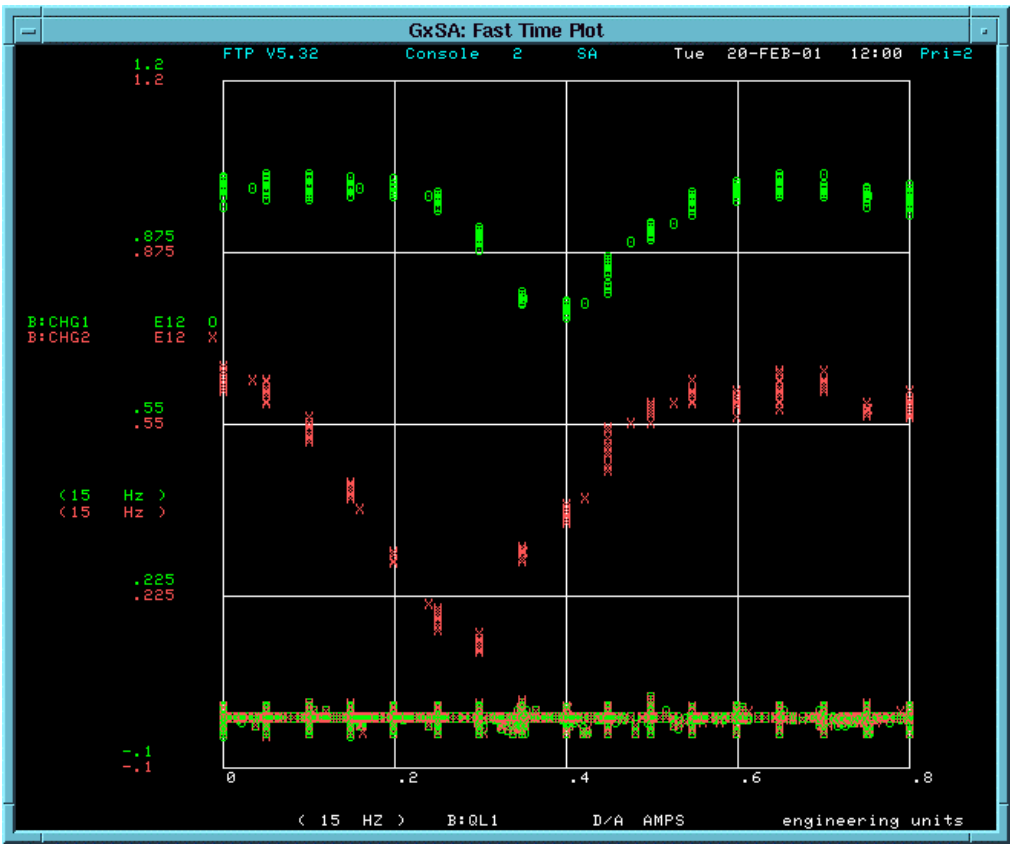
Measurement No. 1: SEXTL = + 20 A, SEXL 4,5,6,7 on



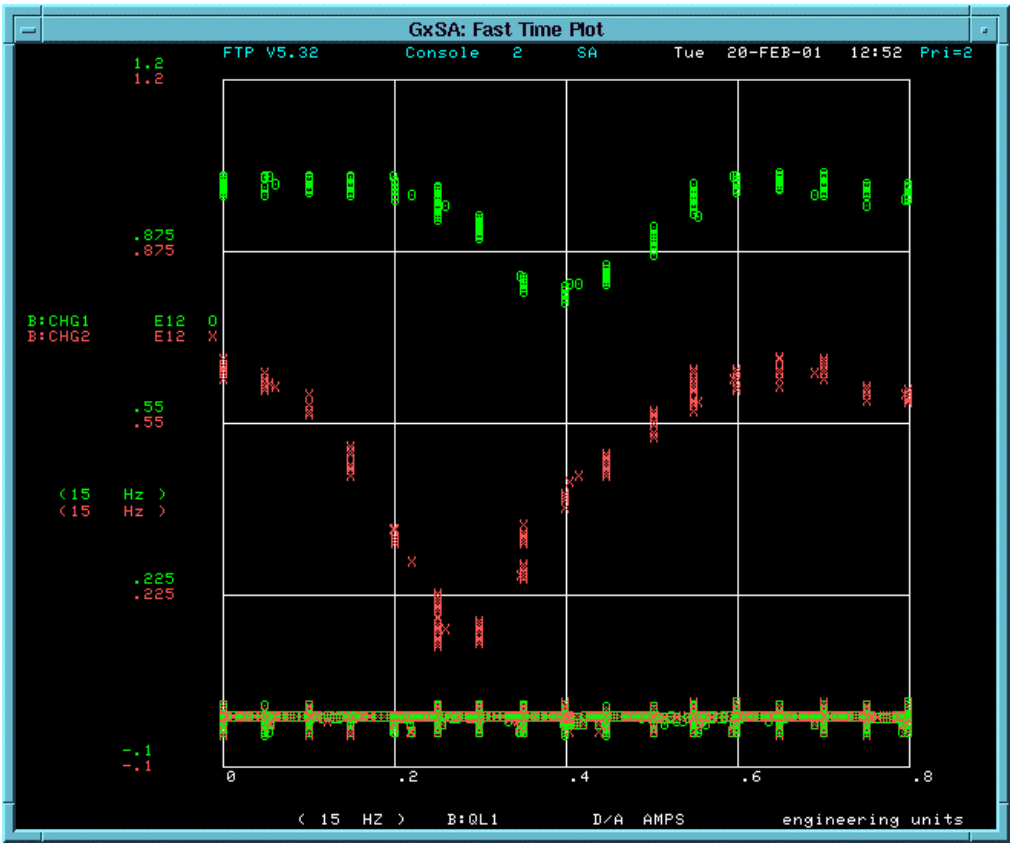


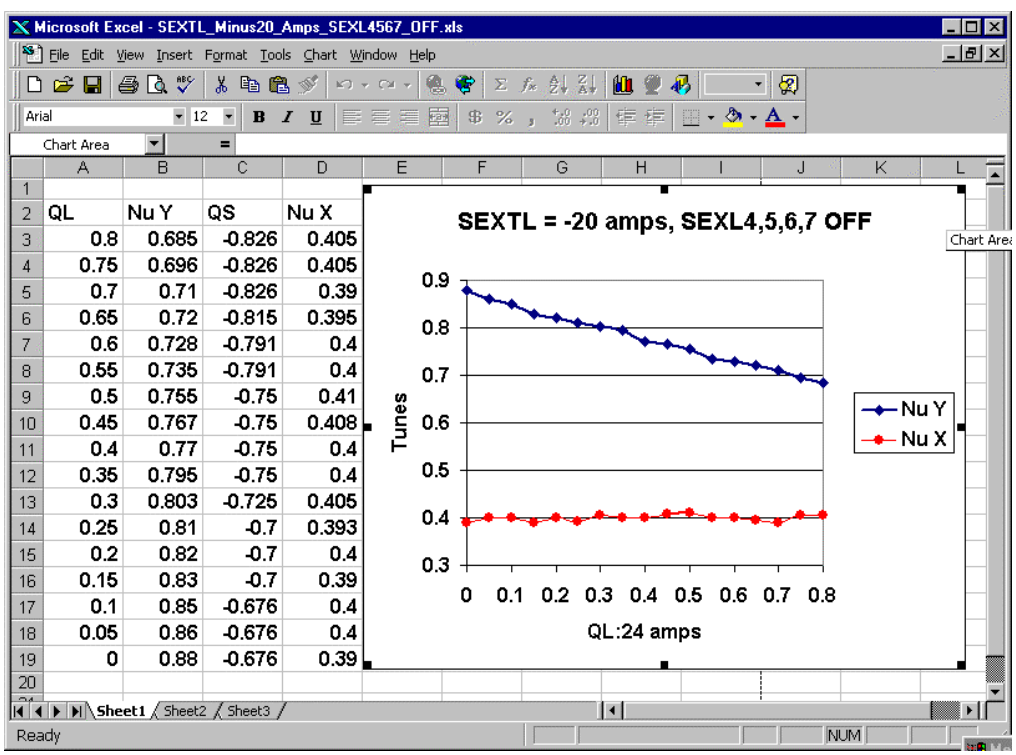
QL	Nu Y	QS	Nu X
0.8	0.695	-0.827	0.402
0.75	0.715	-0.827	0.4
0.7	0.727	-0.827	0.395
0.65	0.733	-0.827	0.39
0.6	0.745	-0.803	0.4
0.55	0.76	-0.803	0.4
0.5	0.77	-0.78	0.4
0.45	0.785	-0.75	0.405
0.4	0.796	-0.75	0.4
0.35	0.808	-0.75	0.392
0.3	0.82	-0.725	0.4
0.25	0.83	-0.7	0.41
0.2	0.845	-0.7	0.4
0.15	0.853	-0.7	0.4
0.1	0.865	-0.7	0.395
0.05	0.875	-0.674	0.4
0	0.88	-0.674	0.4

Measurement No. 2: SEXTL = - 20 A, SEXL 4,5,6,7 on:



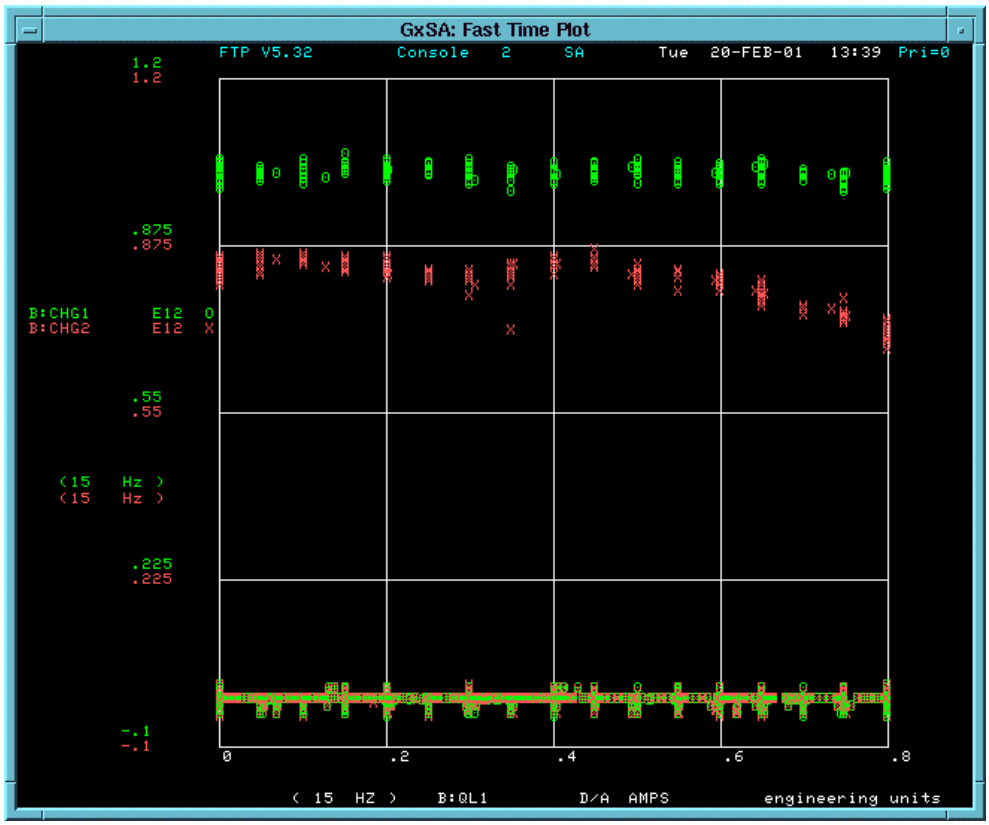
Measurement No. 3: SEXTL = - 20 A, SEXL 4,5,6,7 off

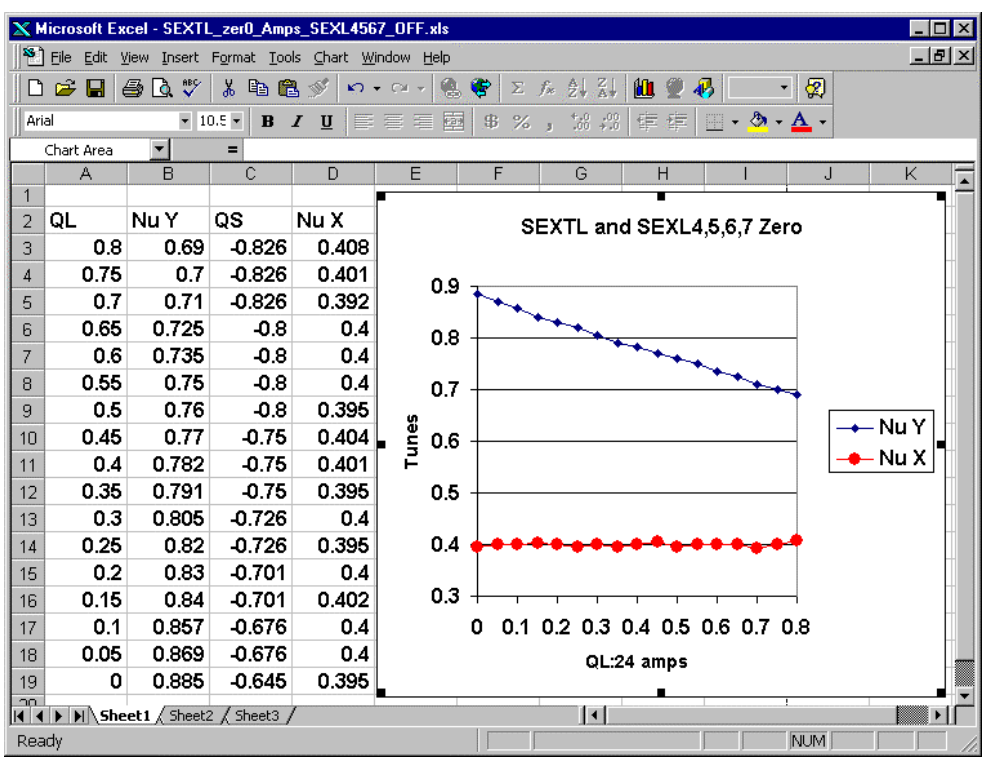




QL	Nu Y	QS	Nu X
0.8	0.685	-0.826	0.405
0.75	0.696	-0.826	0.405
0.7	0.71	-0.826	0.39
0.65	0.72	-0.815	0.395
0.6	0.728	-0.791	0.4
0.55	0.735	-0.791	0.4
0.5	0.755	-0.75	0.41
0.45	0.767	-0.75	0.408
0.4	0.77	-0.75	0.4
0.35	0.795	-0.75	0.4
0.3	0.803	-0.725	0.405
0.25	0.81	-0.7	0.393
0.2	0.82	-0.7	0.4
0.15	0.83	-0.7	0.39
0.1	0.85	-0.676	0.4
0.05	0.86	-0.676	0.4
0	0.88	-0.676	0.39

Measurement No. 4: SEXTL = 0 A, SEXL 4,5,6,7 off





QL	Nu Y	QS	Nu X
0.8	0.69	-0.826	0.408
0.75	0.7	-0.826	0.401
0.7	0.71	-0.826	0.392
0.65	0.725	-0.8	0.4
0.6	0.735	-0.8	0.4
0.55	0.75	-0.8	0.4
0.5	0.76	-0.8	0.395
0.45	0.77	-0.75	0.404
0.4	0.782	-0.75	0.401
0.35	0.791	-0.75	0.395
0.3	0.805	-0.726	0.4
0.25	0.82	-0.726	0.395
0.2	0.83	-0.701	0.4
0.15	0.84	-0.701	0.402
0.1	0.857	-0.676	0.4
0.05	0.869	-0.676	0.4
0	0.885	-0.645	0.395