Recent Beam Optics Changes at the Tevatron

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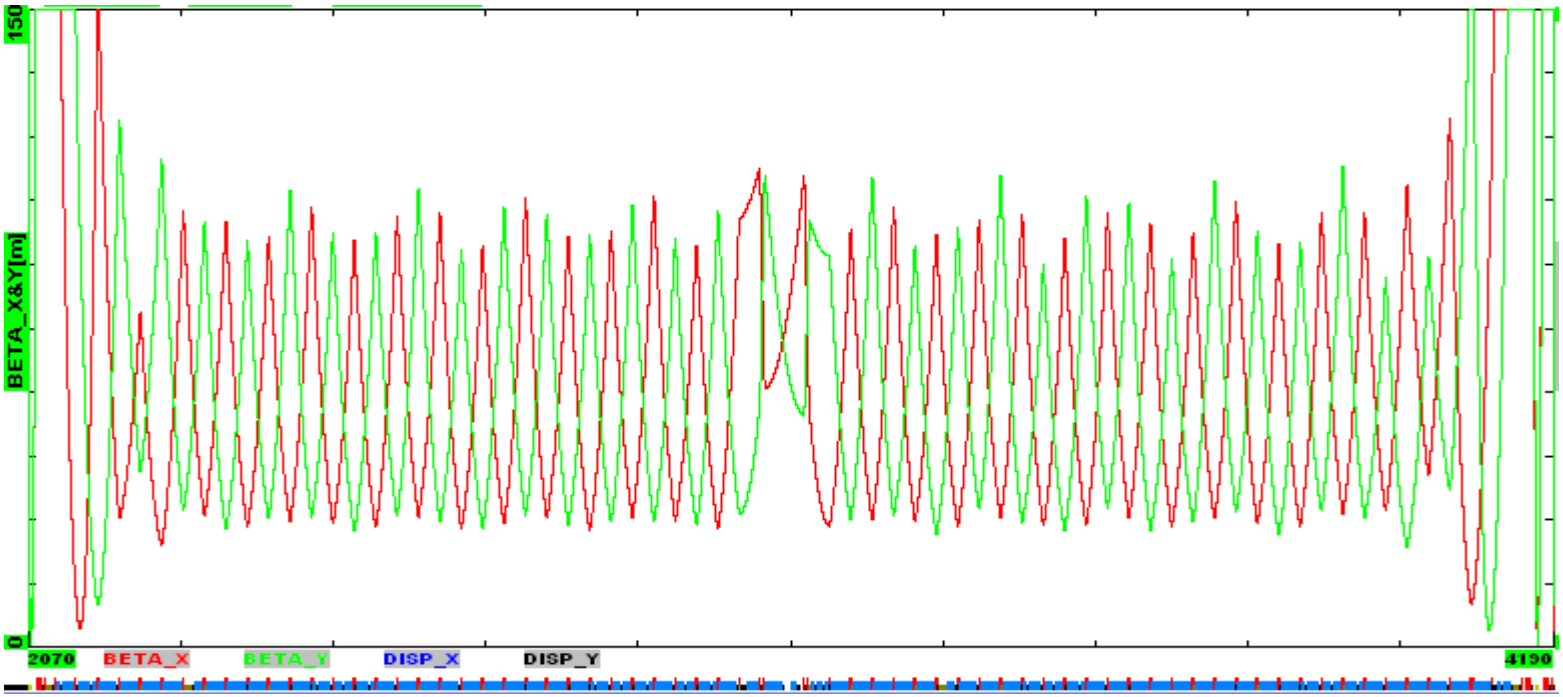
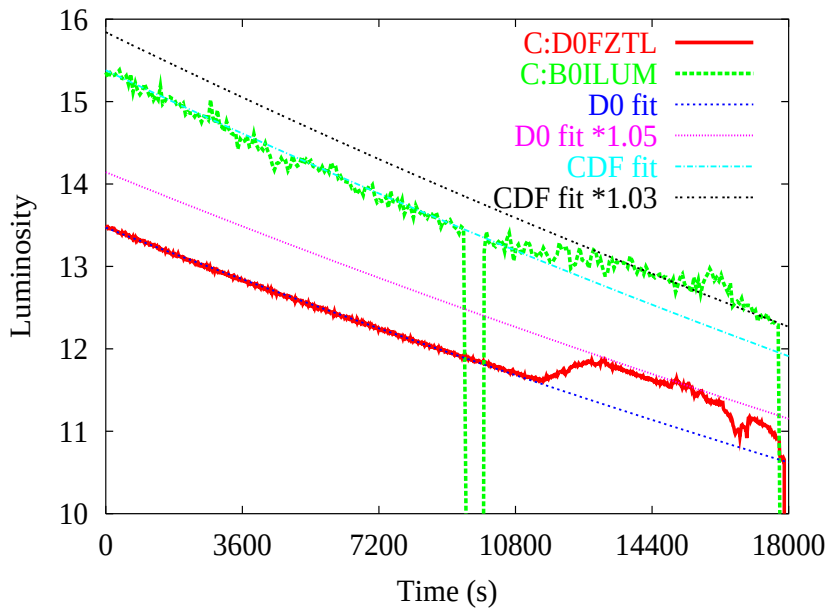
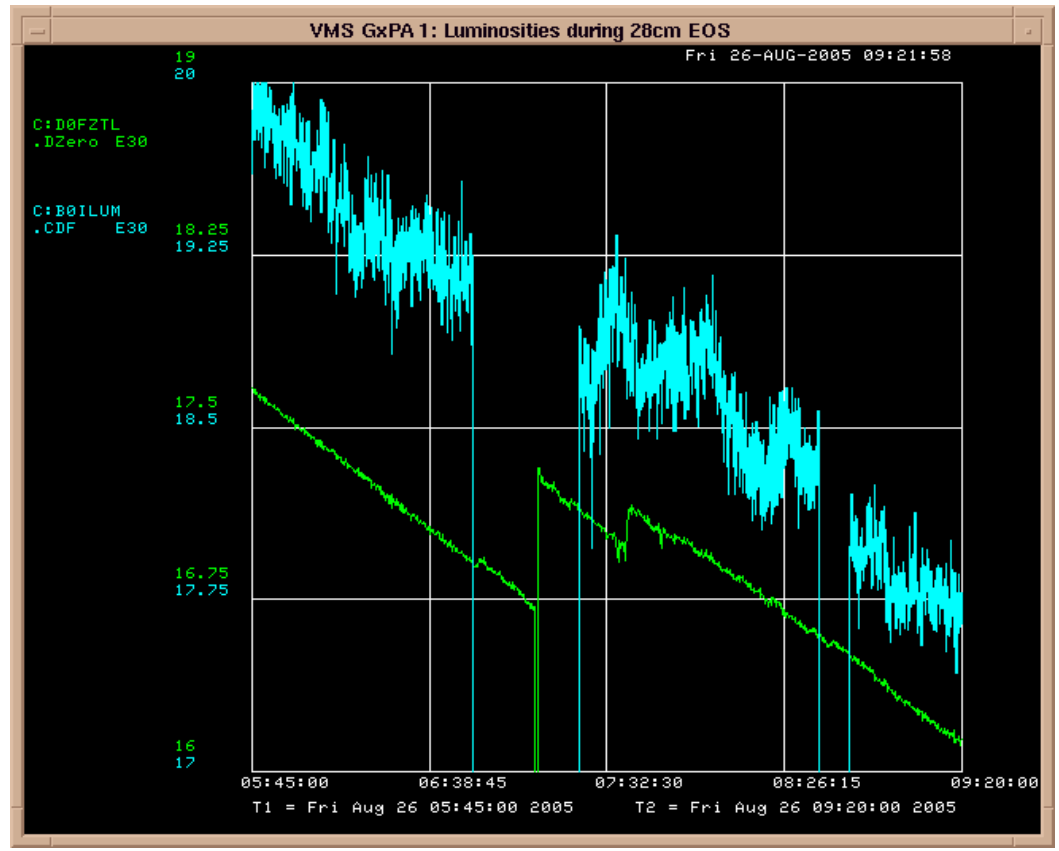
Beta Functions After Correction



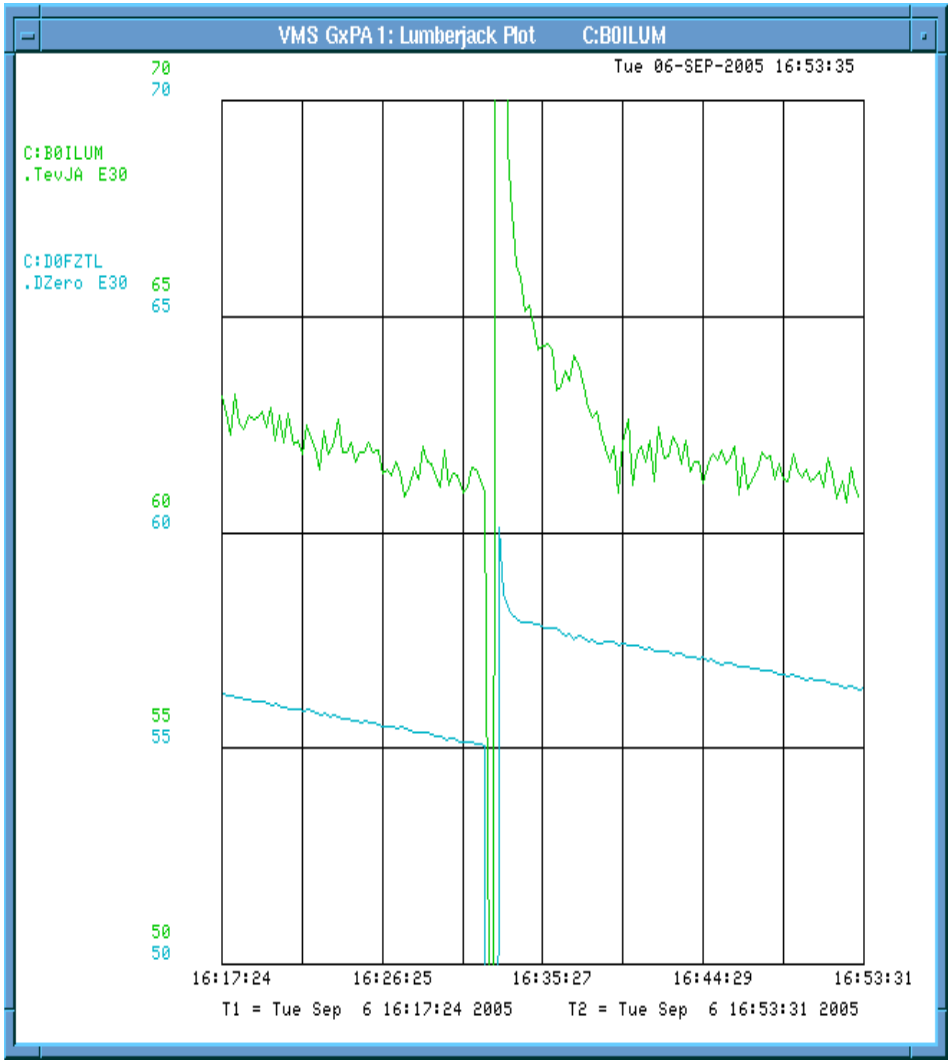
	β_x^* (cm)	β_y^* (cm)	
CDF	30.3	29.1	$\pm 5\%$
D0	29.2	28.2	$\pm 5\%$

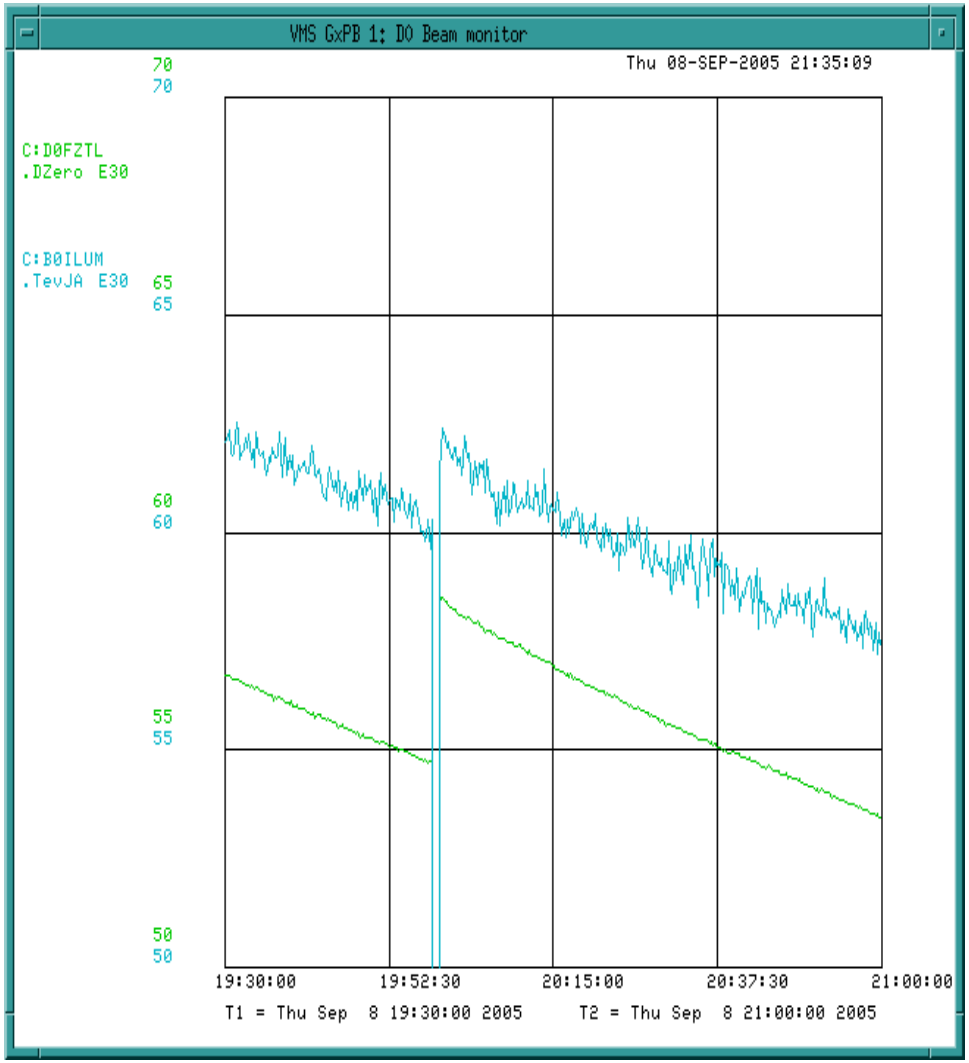
End of Store Studies 8/4 and 8/26



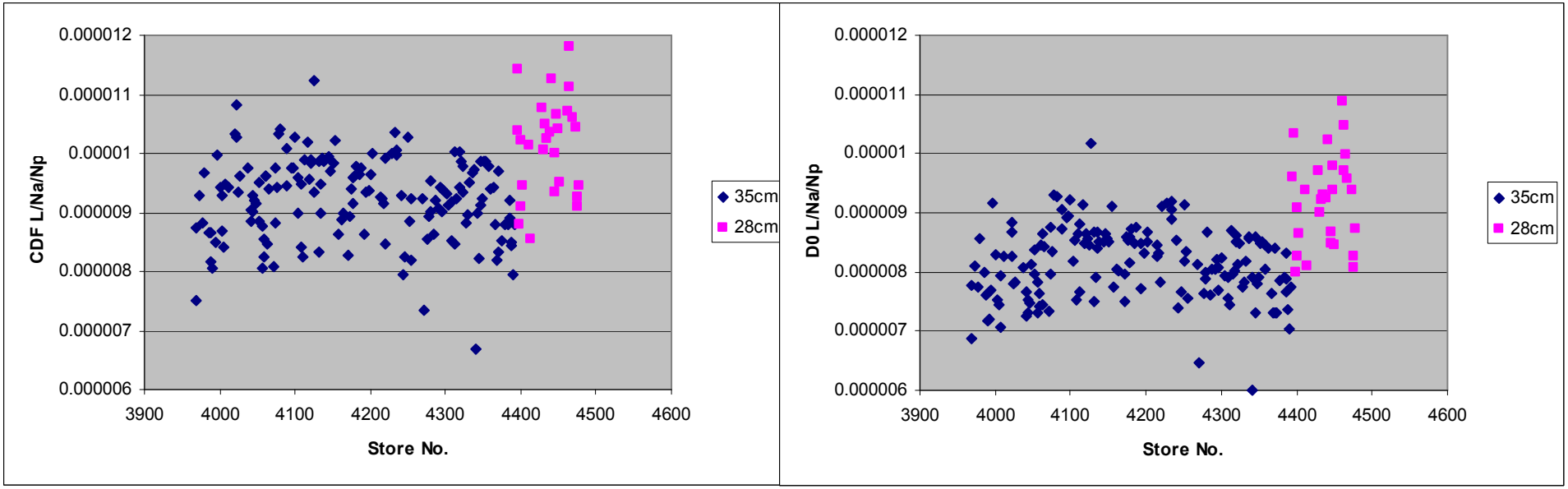


End of Store Studies 9/6 and 9/8

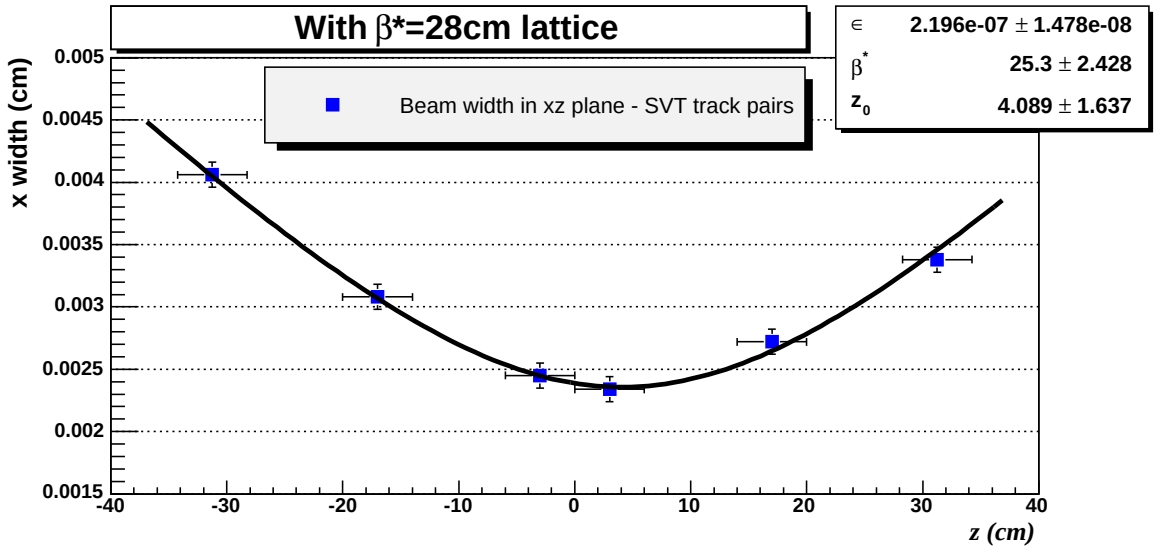


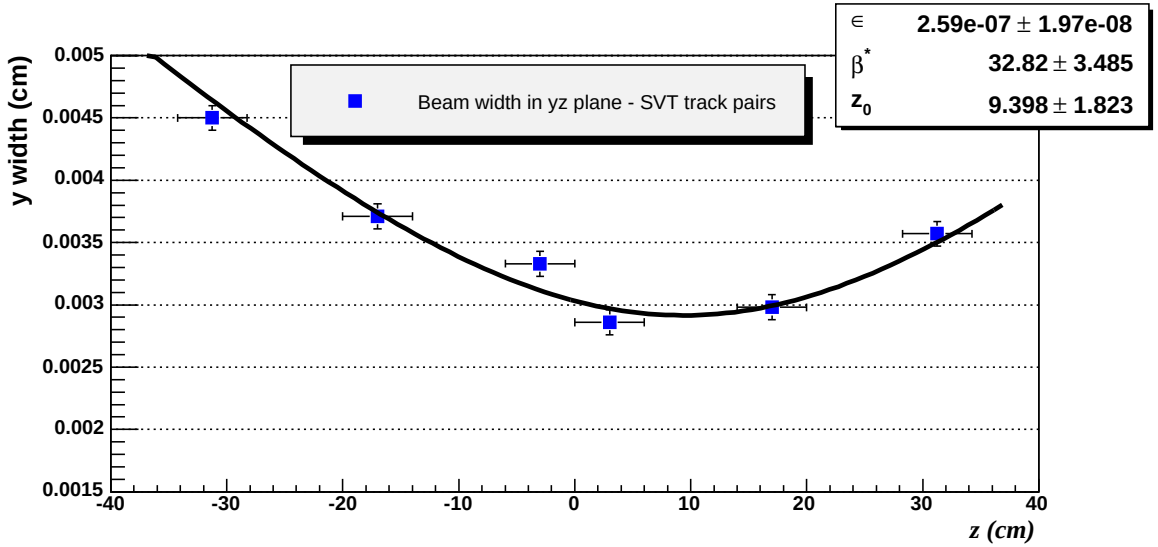


Effect of the New Optics on Luminosity

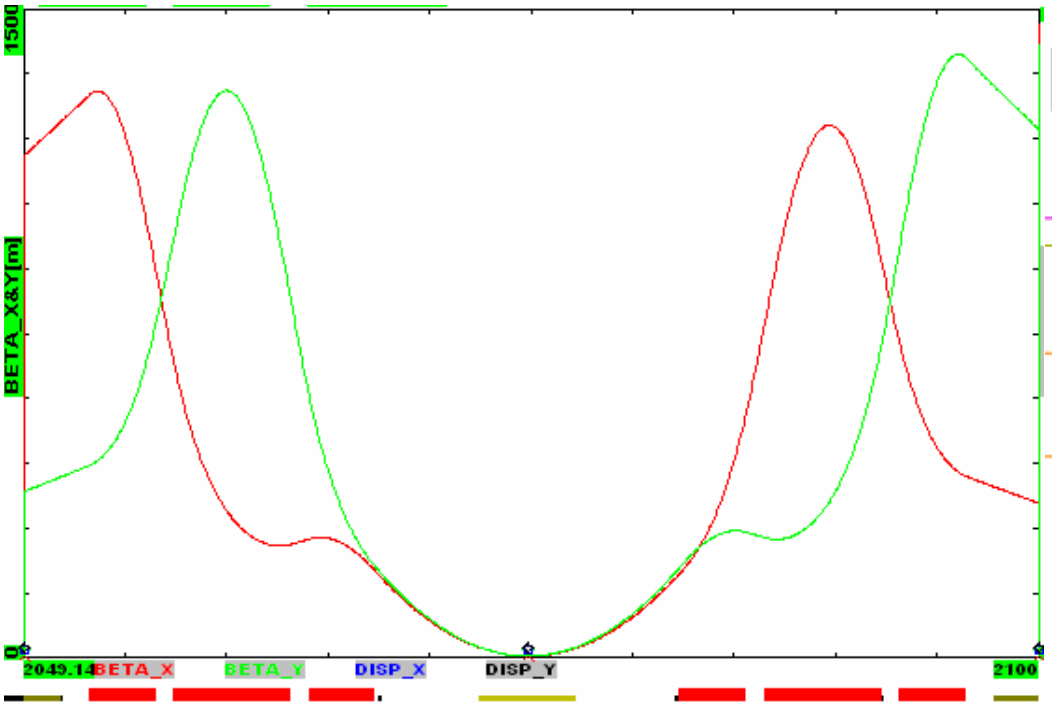


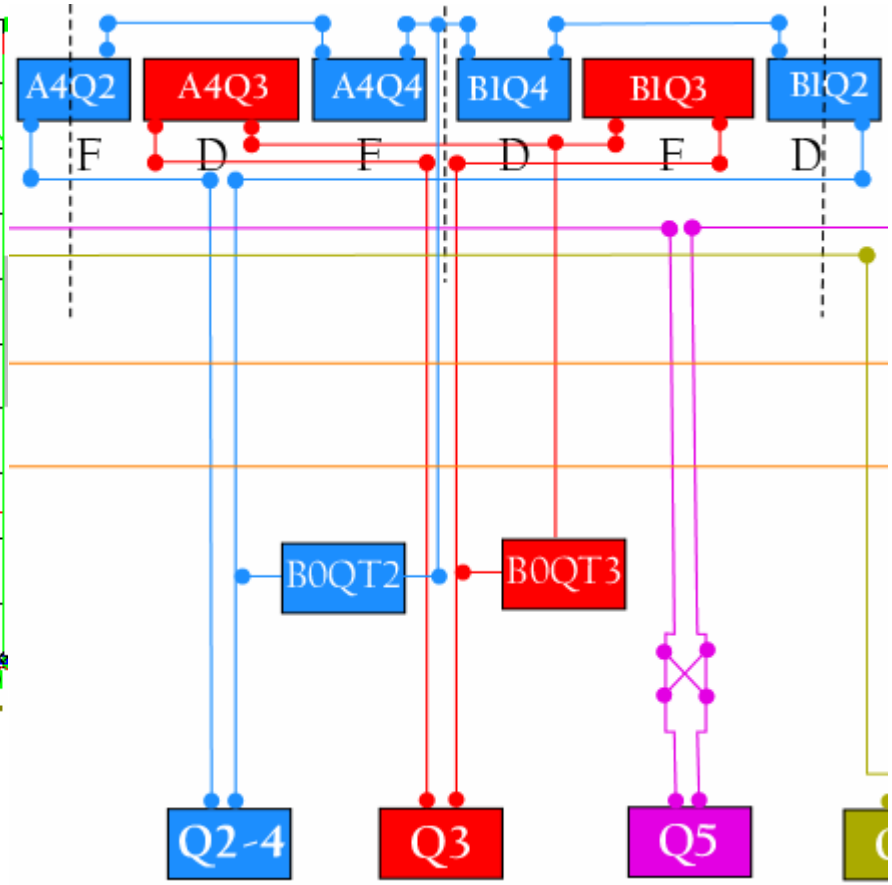
CDF Measurement of beta* in 8/26 EOS
(Chris Neu)





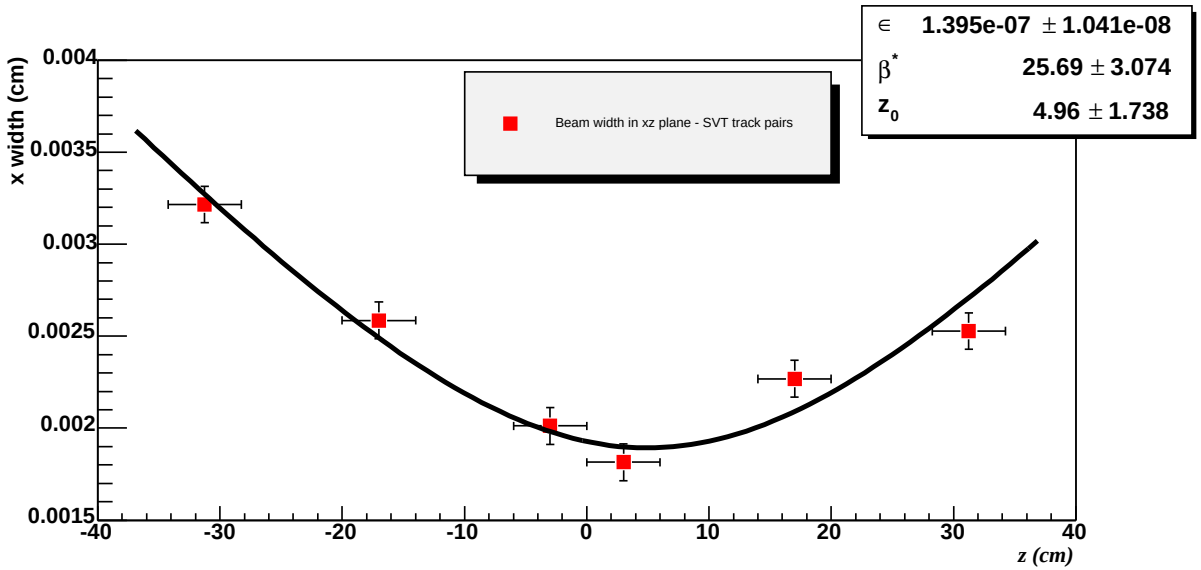
Alpha-bumps at CDF

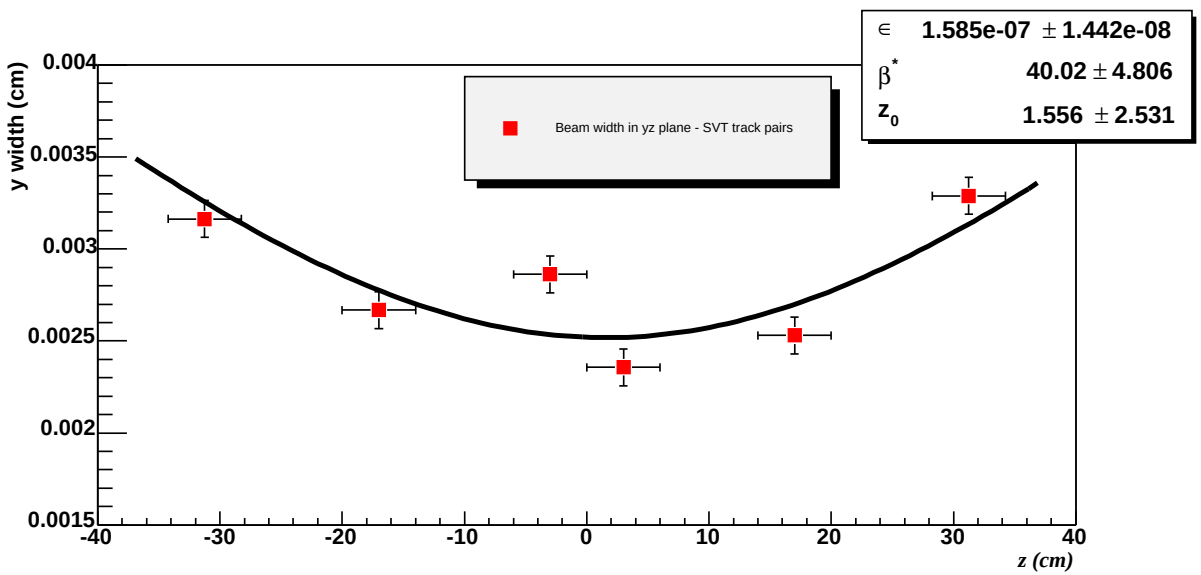




C:B0QT2F = 5.85
C:B0QT3F = 10.68

Alpha-bumps at CDF: 1st Round

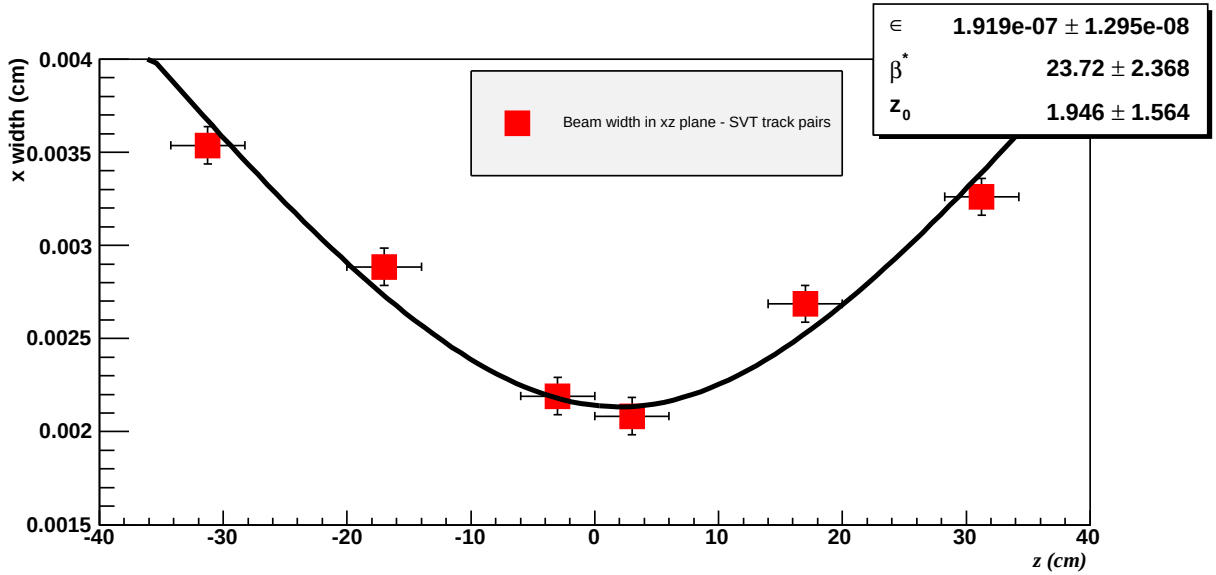


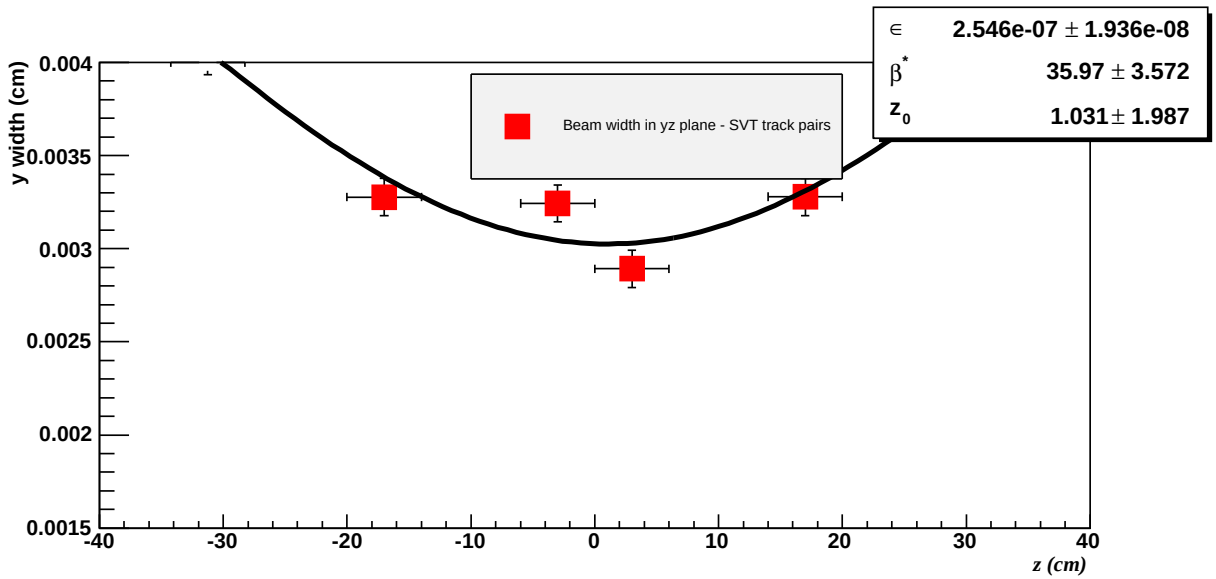


C:B0QT2F = 0.00
C:B0QT3F = 5.49

W. Sakumoto

Alpha-bumps at CDF: 2nd Round





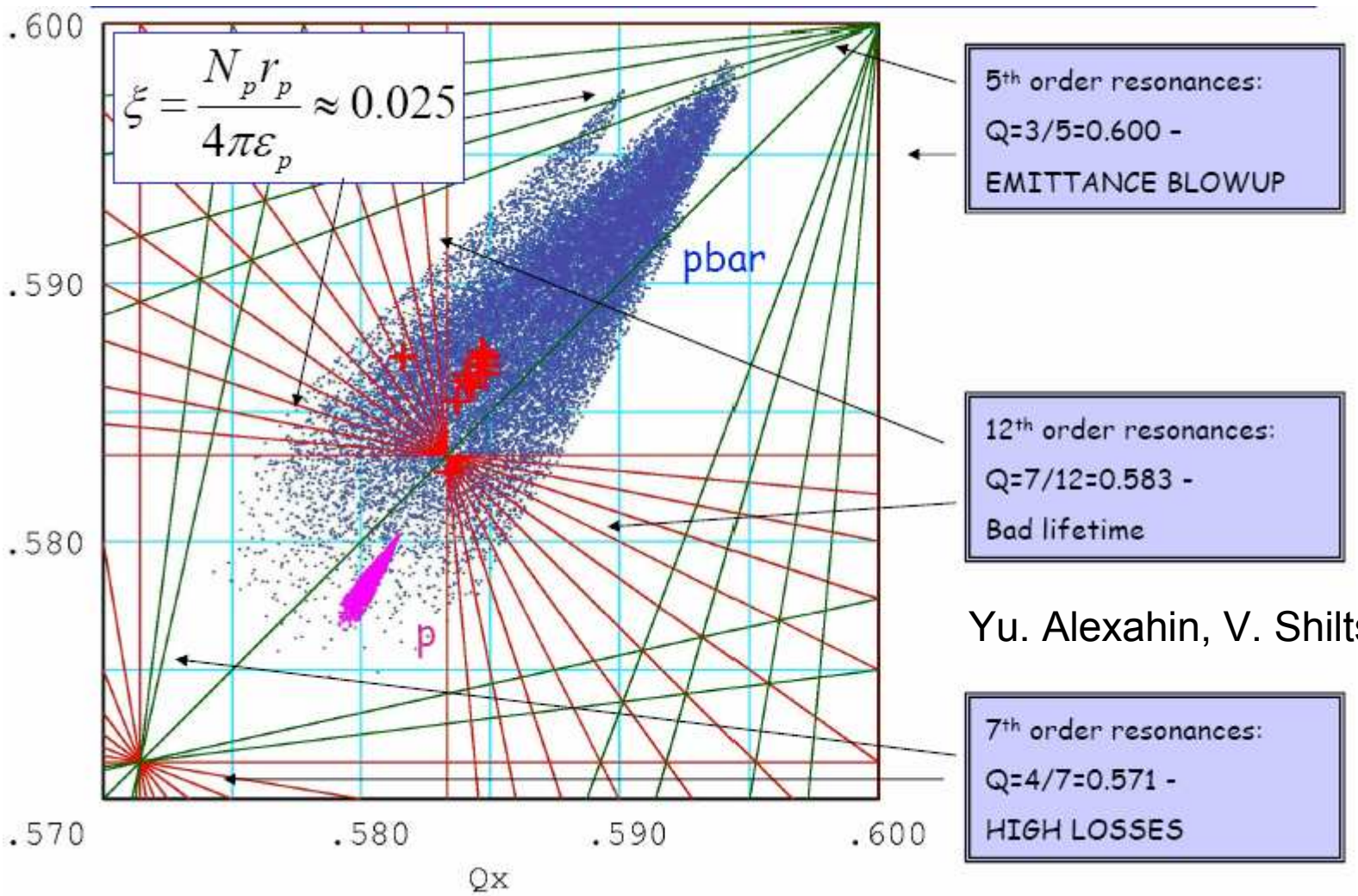
QT2 moved to the upstream quadrupole.

C:B0QT2F = 5.97

C:B0QT3F = 0.00

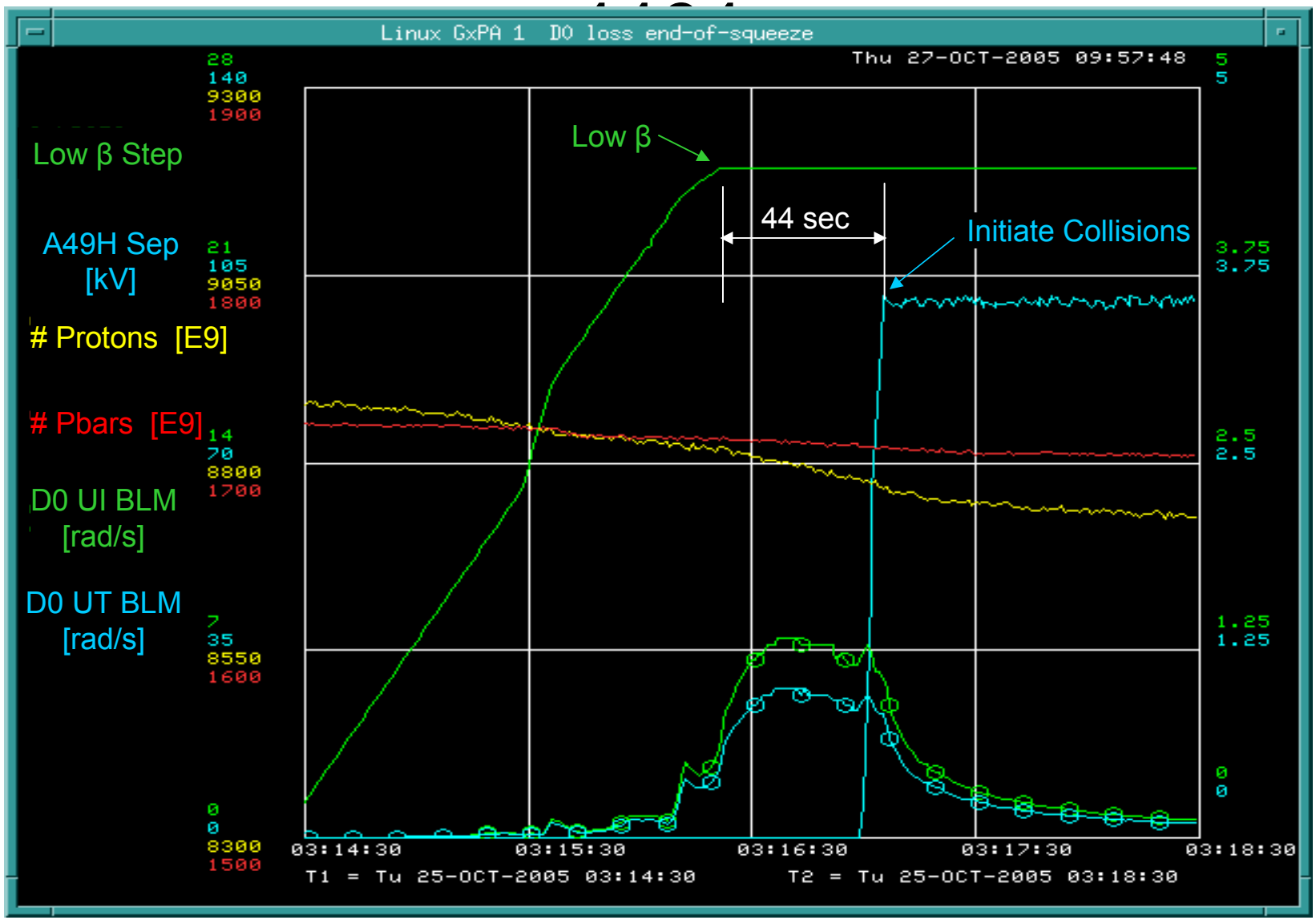
Geumbong Yu

New Proton Working Point

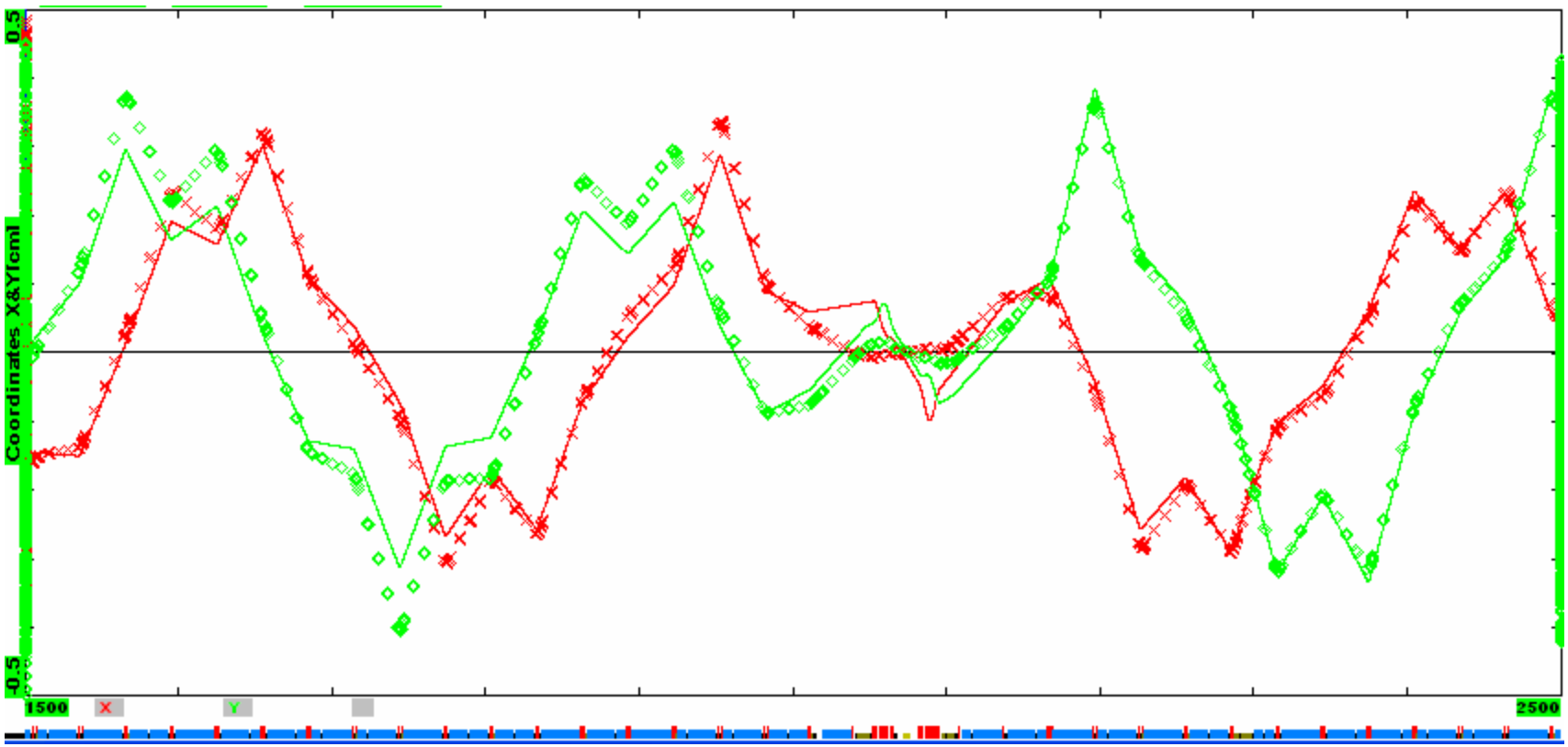


Yu. Alexahin, V. Shiltsev

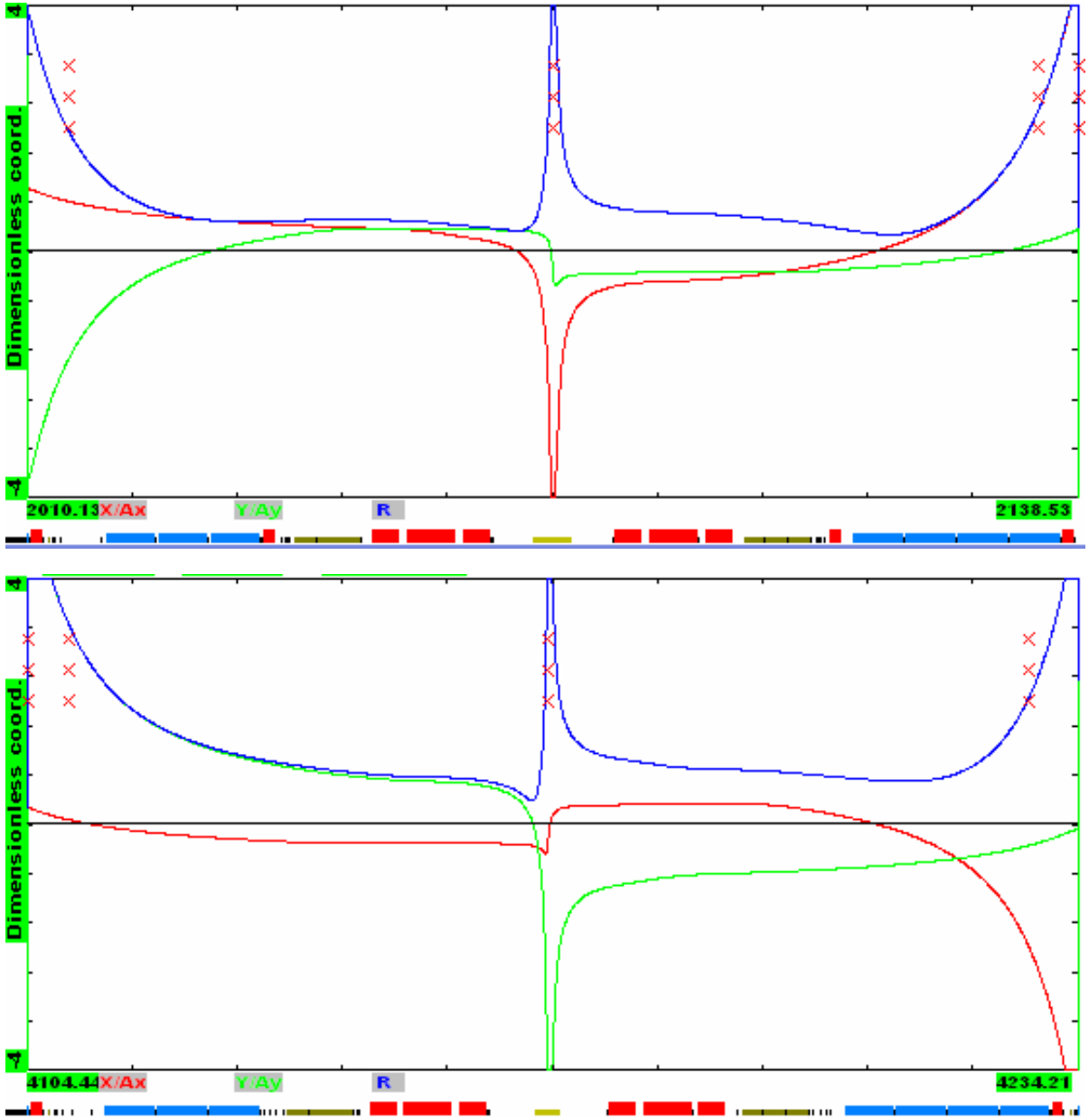
D0 Losses @ End of Squeeze: Store



SQ25 Helix Beta*=28cm (Before Corr)

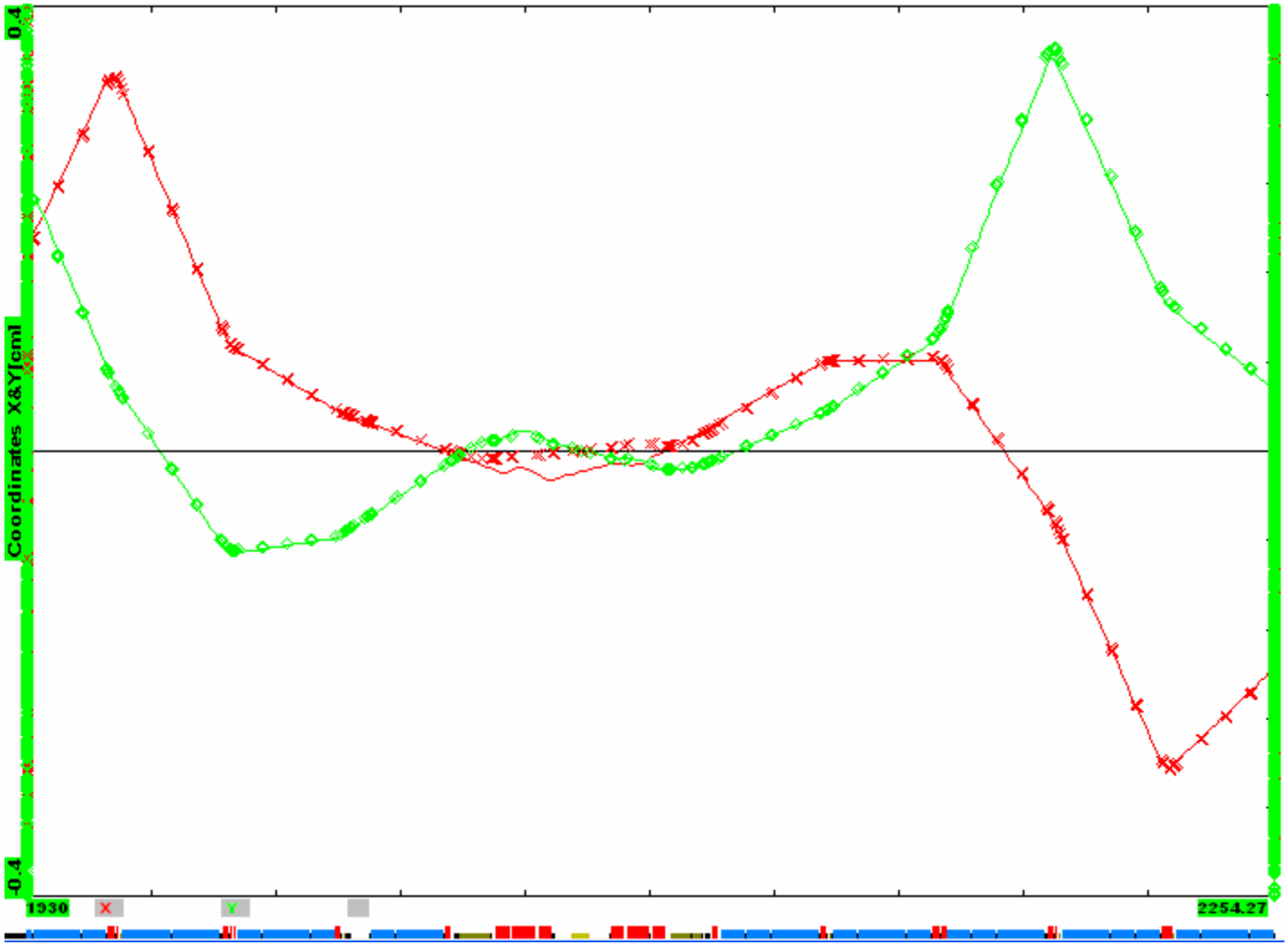


SQ25 Helix Beta*=28cm (Before Corr)



SQ25 Helix Beta*=28cm (After Corr)

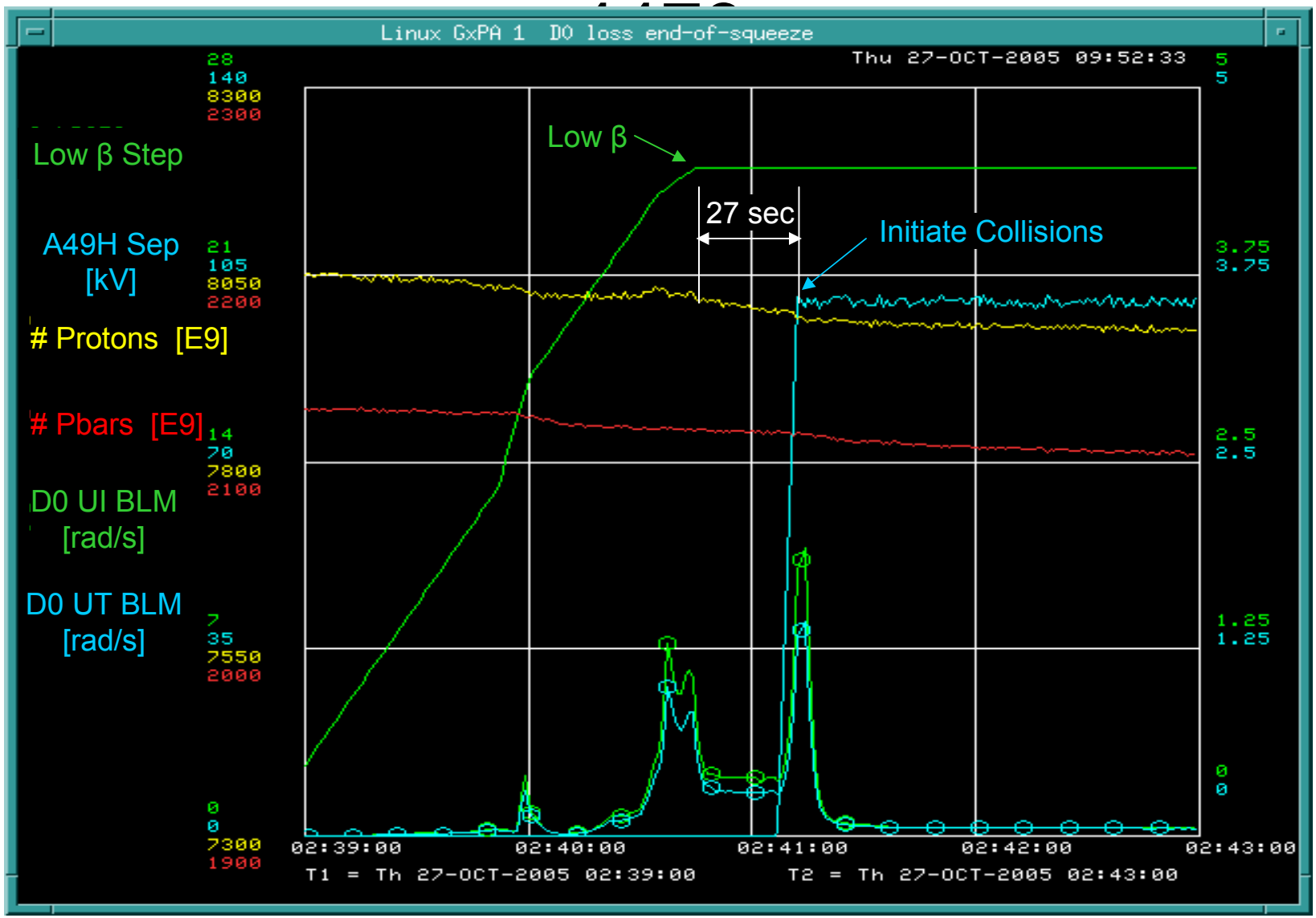
C:A7SVMF = -16.55
C:A4SVMF = 102.0
C:A4SHMF = 0.00
C:B1SVMF = 105.0
C:B1SHMF = 13.0
C:B7SHMF = 60.93
C:C7SVMF = 47.96
C:C4SVMF = 0.00
C:C4SHMF = 89.61
C:D1SVMF = 0.0
C:D1SHMF = 91.63
C:D7SVMF = 100.0
C:D4SHMF = 12.67



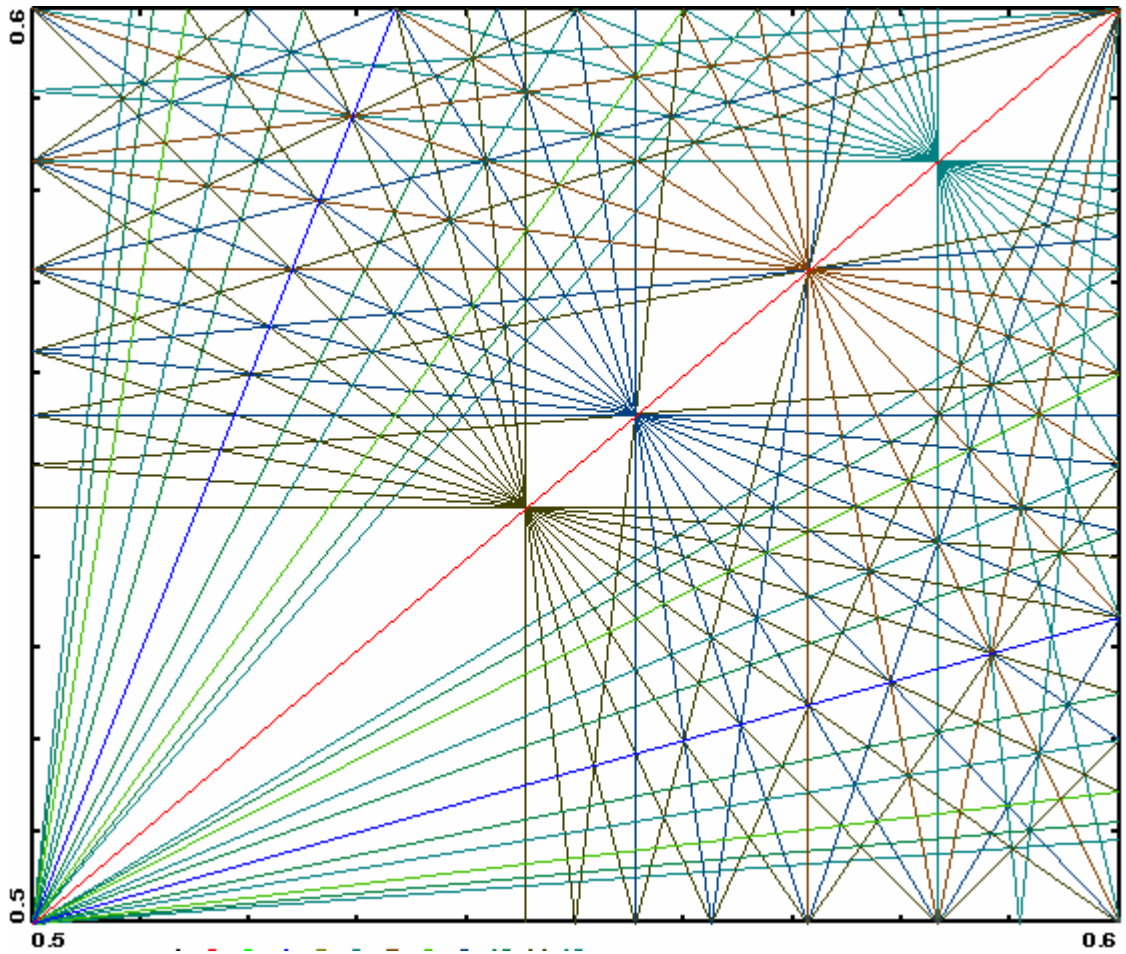
SQ25 Helix Beta*=28cm
Separations in the 1st LR Collisions

	B0 US	B0 DS	D0 US	D0 DS
Collisions	5.48	5.7	4.78	5.04
SQ 25 before	4.02	4.6	6.54	4.09
SQ 25 after	5.62	5.72	4.76	5.04

D0 Losses @ End of Squeeze: Store



What's Next?

- Tune helix at sequence 24
- Try octupoles to decrease chromaticity in collisions and improve lifetimes
- Increase beam separation at LR collisions
- Explore new working points (?)

Move Tunes to $\frac{1}{2}$?