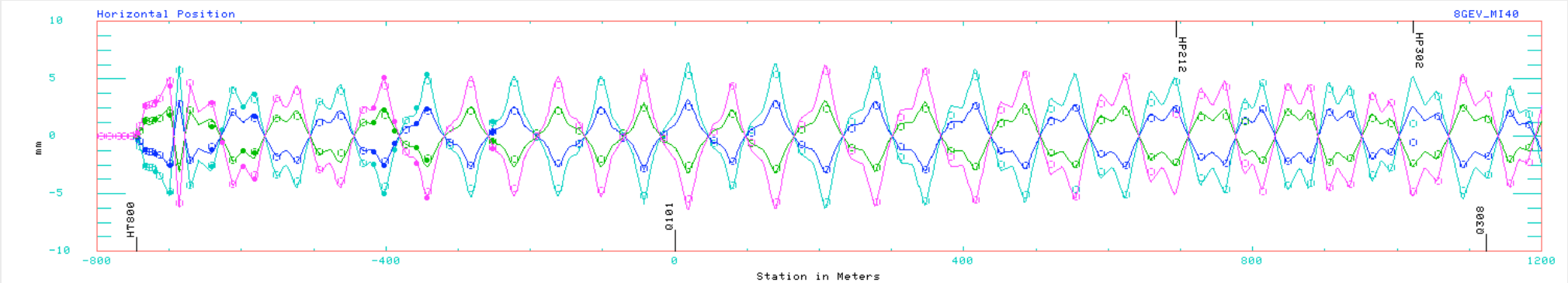
MI8 line to MI optics study, 07/29/2008

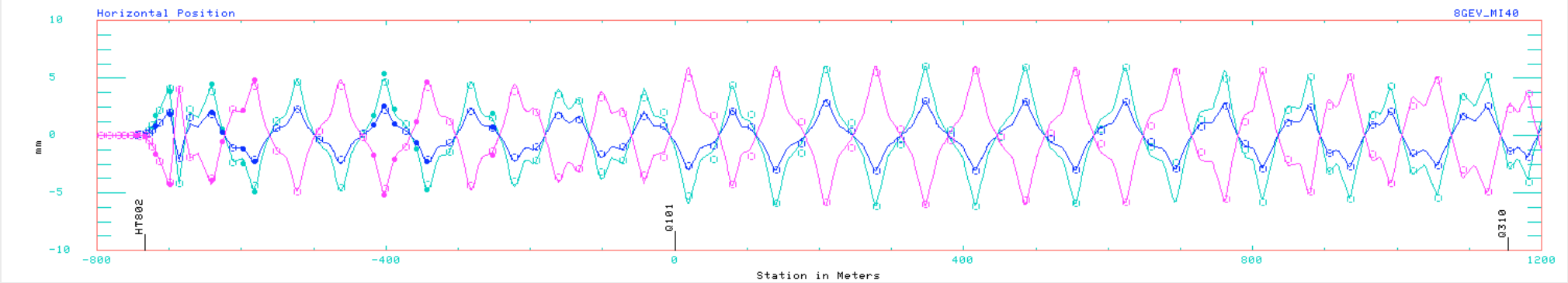
- Orbit data
  - HT800, HT802 & HT804 for horizontal plane.
  - MP02, VT803 & VT805 for vertical plane.
- Dispersion data
  - ± 1600 Hz from MI nominal injection frequency.
- Lattice
  - Measured beta function
  - Matching to MI beta function

Horizontal orbits

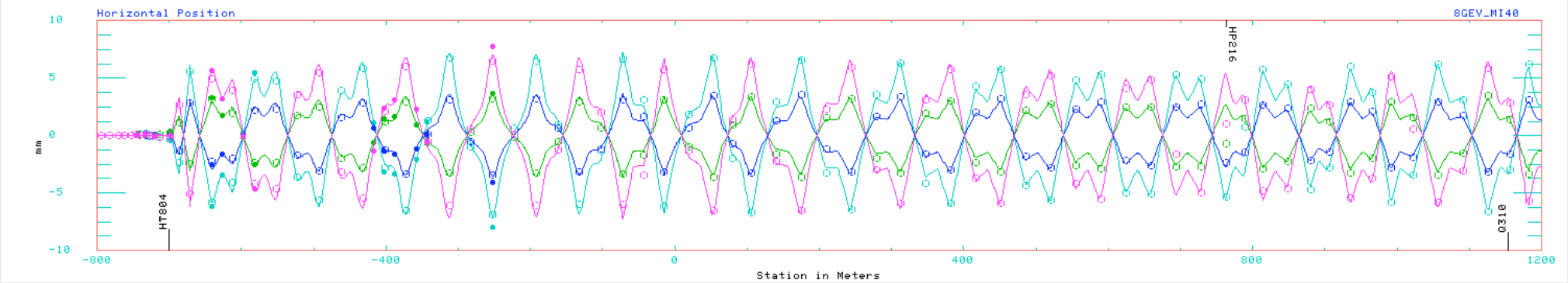
HT800



HT802

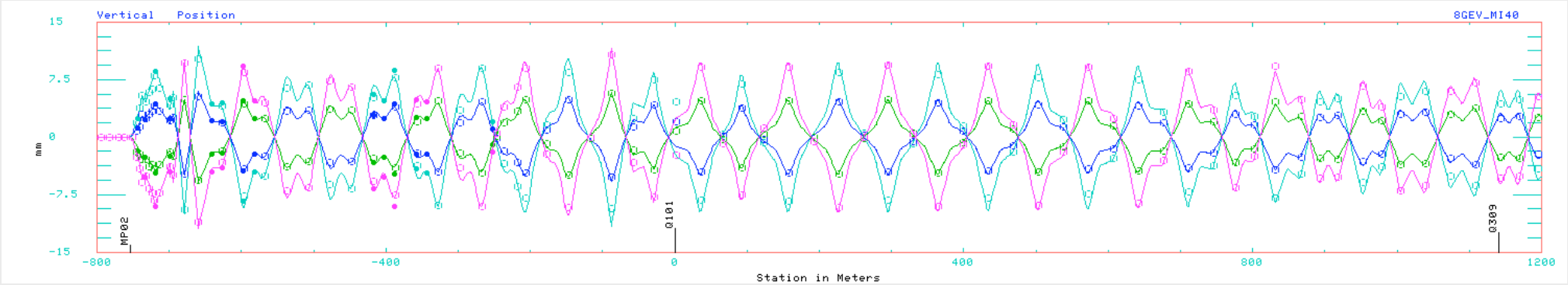


HT804

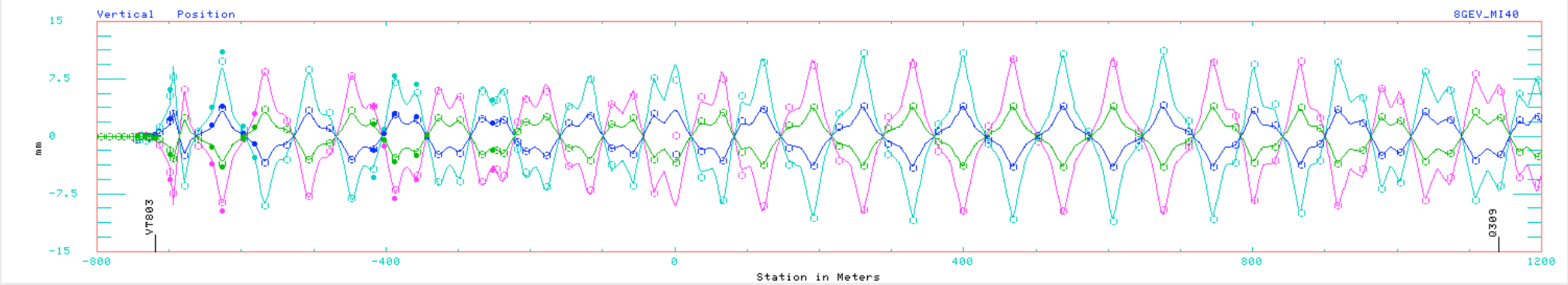


Vertical orbits

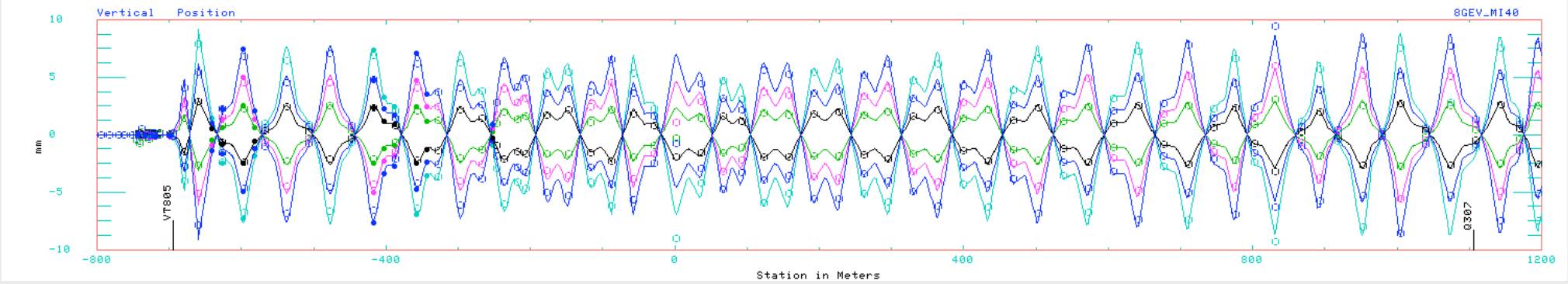
MPØ2



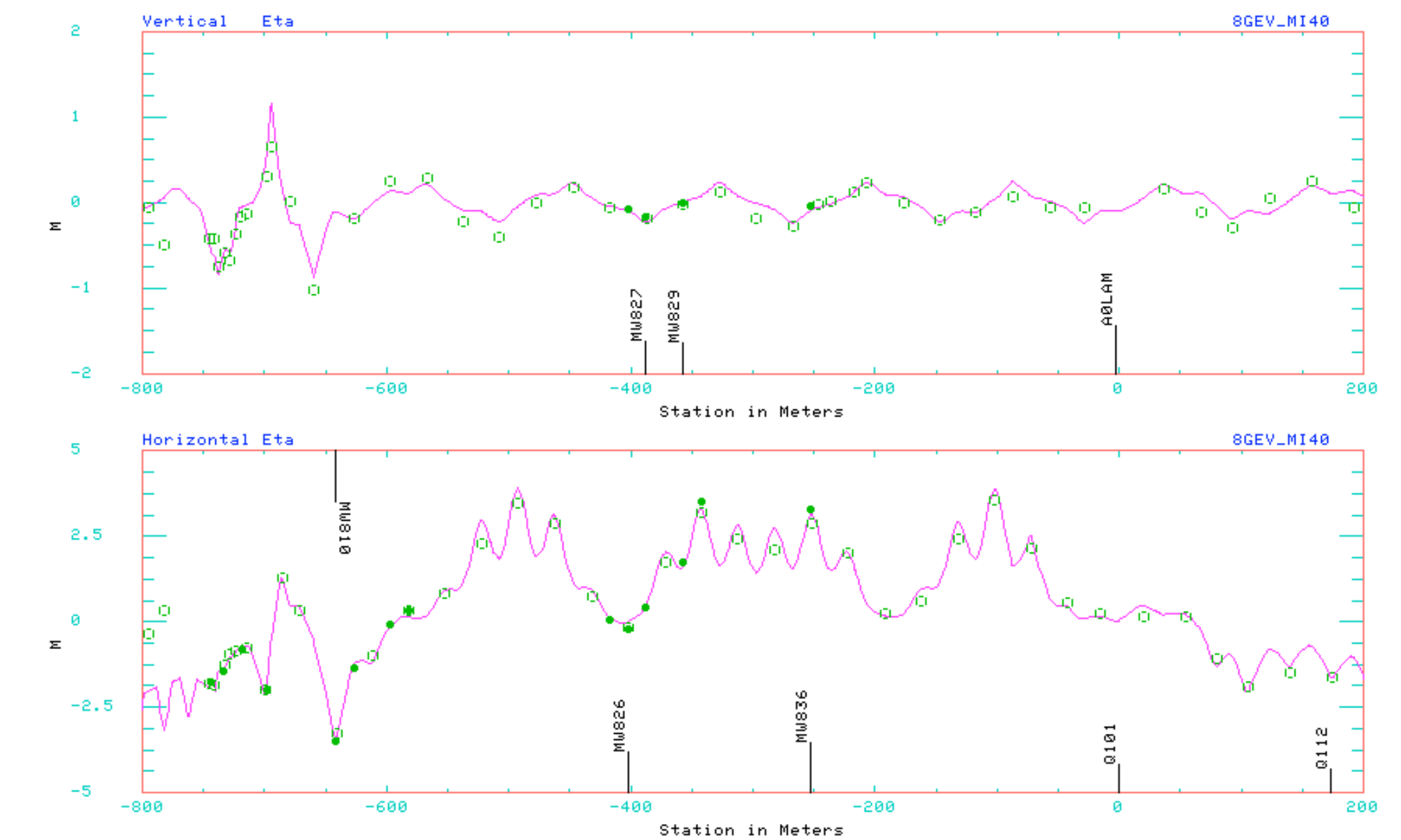
VT803



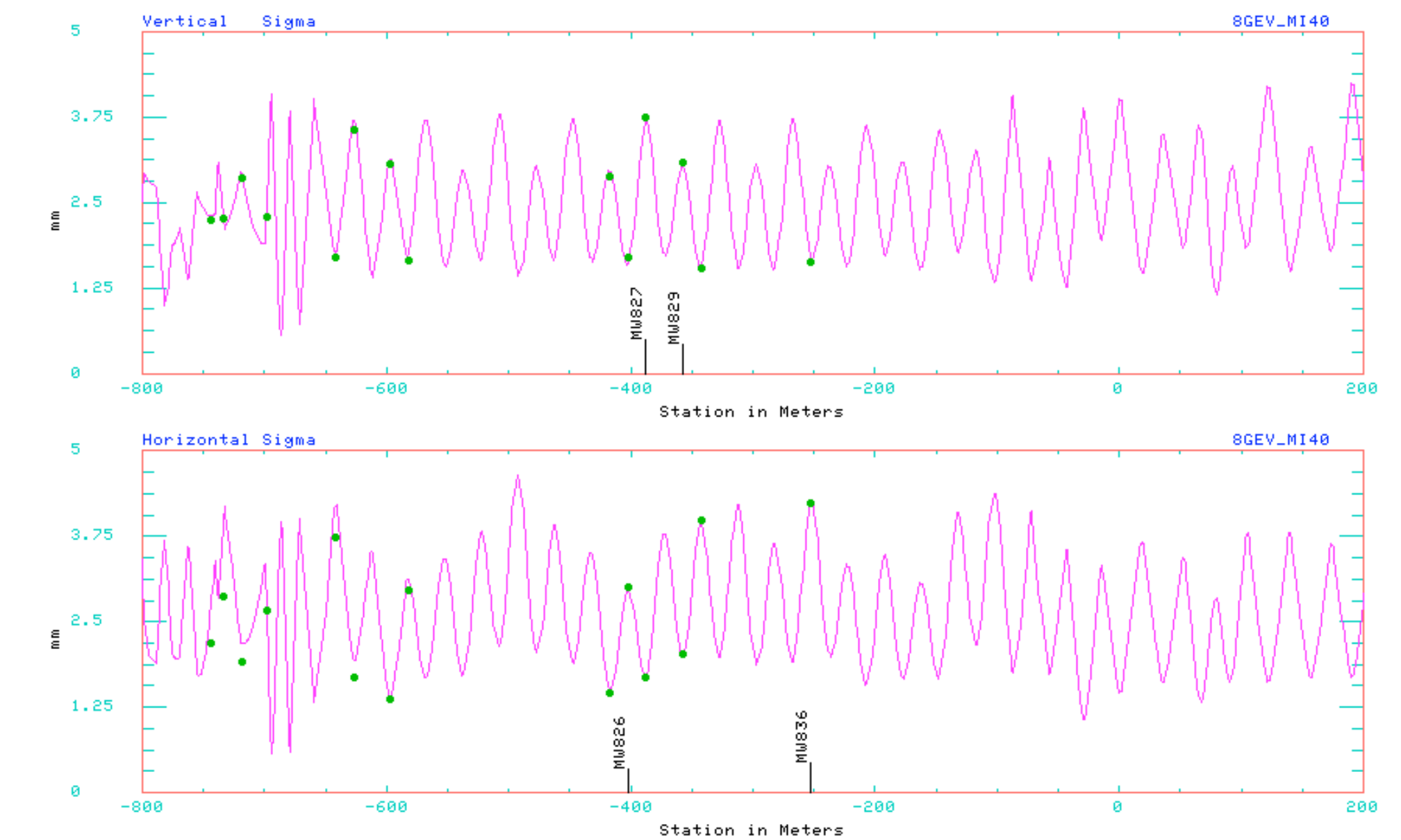
VT805



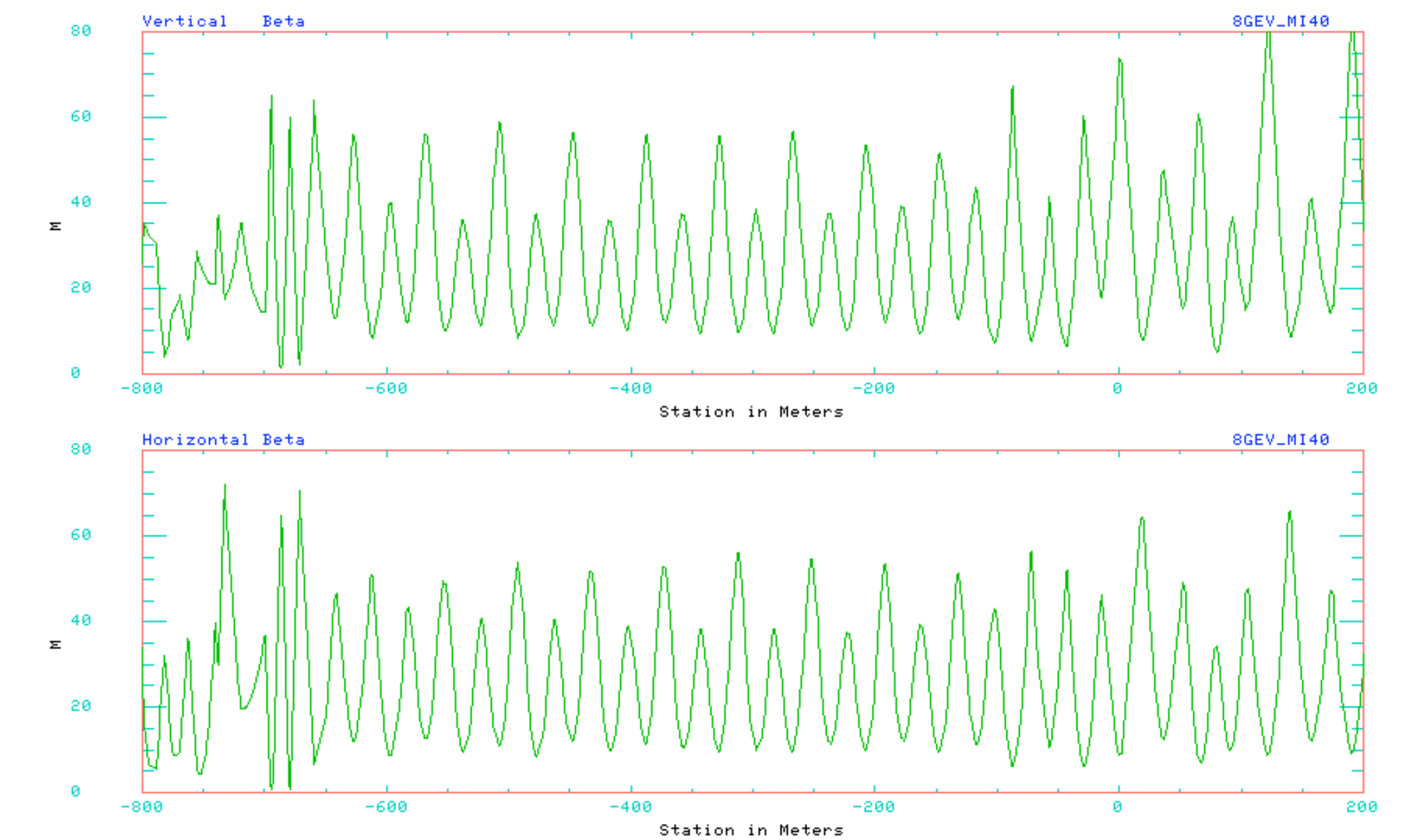
MI8 line dispersion function



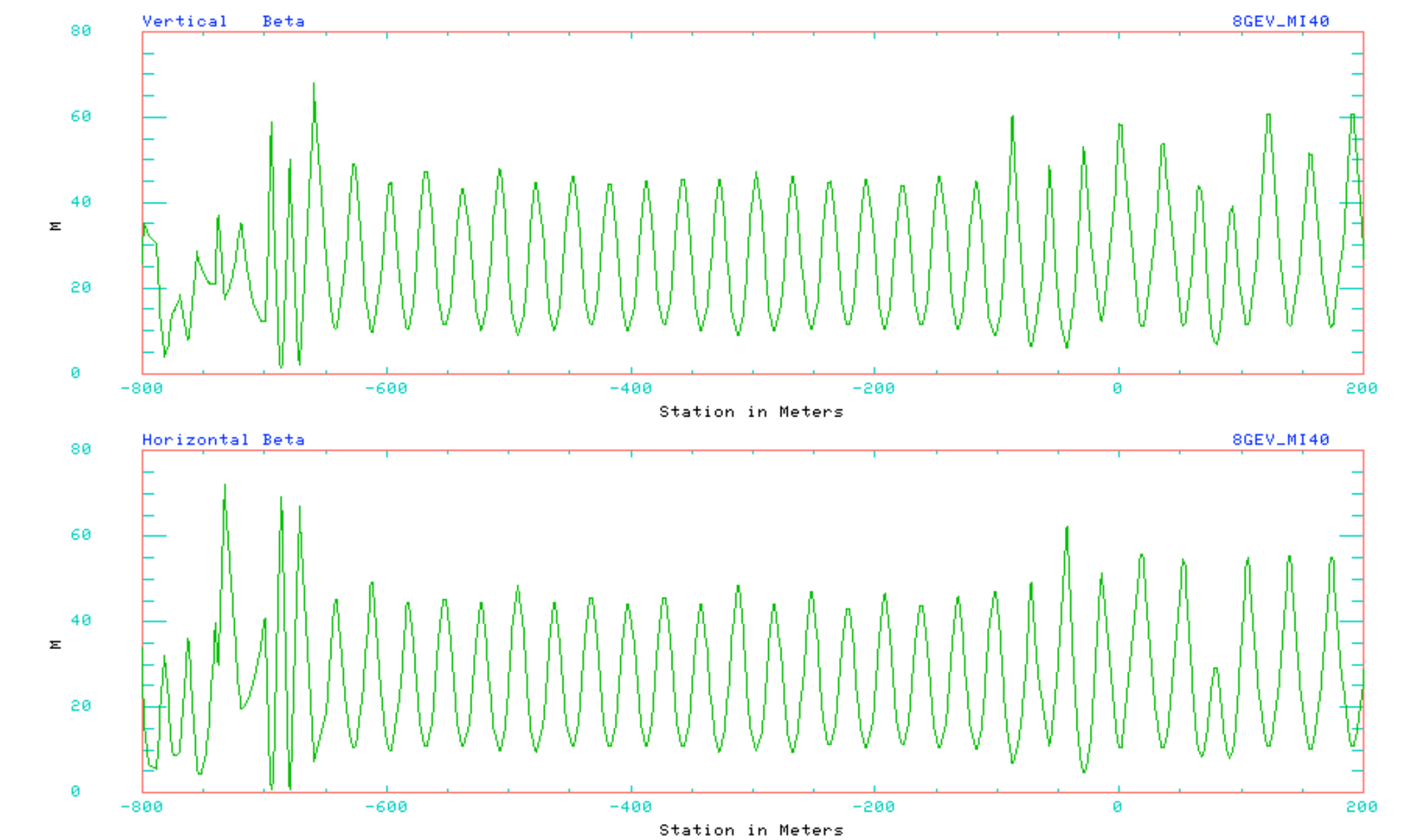
MI8 line sigma



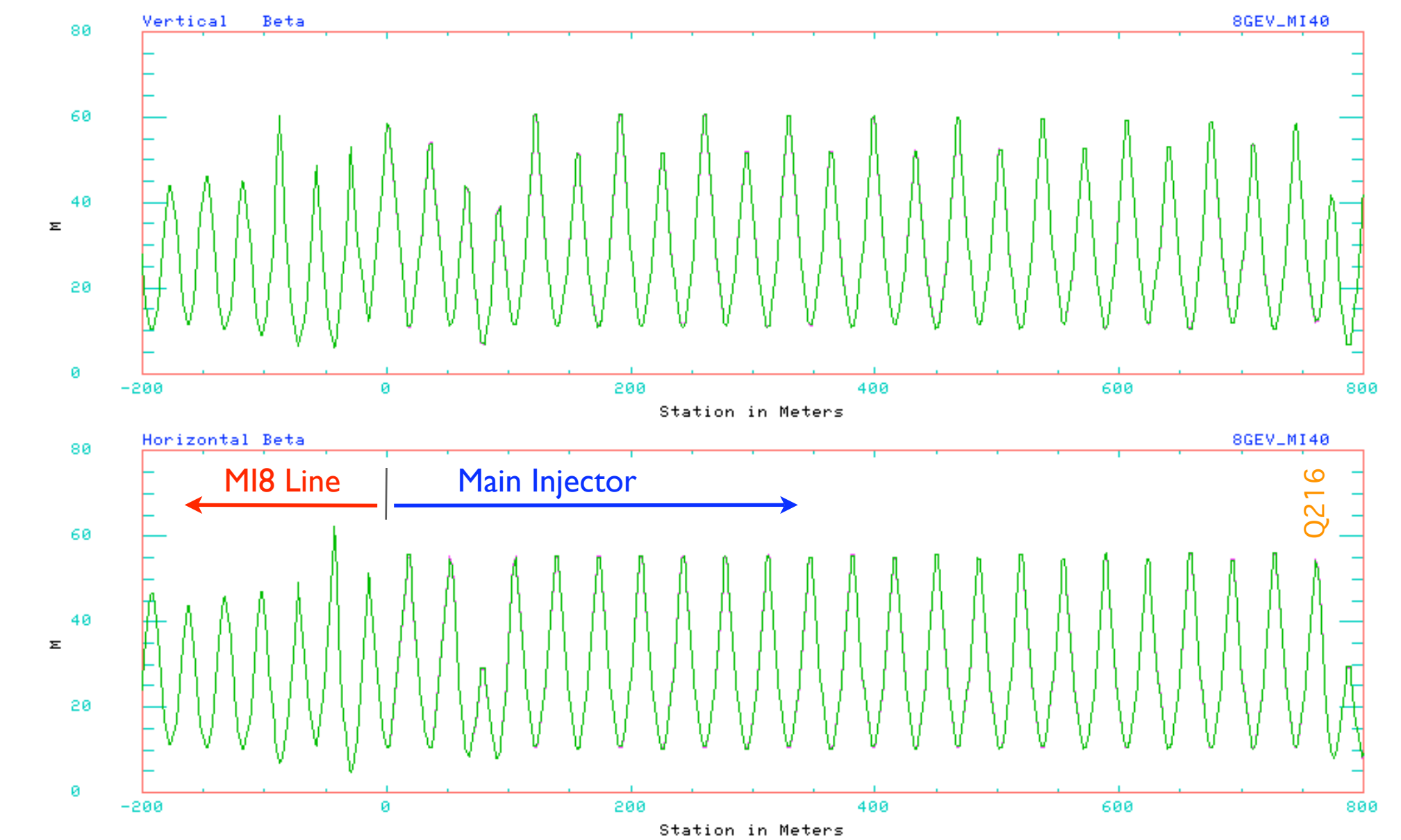
MI8 line beta, as is



MI8 line beta, corrected



Injection beta matching at MI



MI8 line quad setting

DB_name		Setting	reading	used reading	matched	Delta	New setting	Q847 adjustment	847+ Quads
B:Q800S	Amps	43.740	43.005	43.005	43.005				
B:Q801S	Amps	32.180	31.765	31.765	31.765				
B:Q802S	Amps	15.600	15.525	15.525	15.525				
B:Q804S	Amps	29.440	28.765	28.765	28.765				
B:Q805S	Amps	12.380	12.125	12.125	12.125				
B:Q806S	Amps	21.500	21.285	21.285	21.785	0.500	22.000		
B:Q807S	Amps	33.500	33.125	33.125	32.125	-1.000	32.500		
B:Q808S	Amps	12.980	12.765	12.765	12.765				
B:Q809S	Amps	11.880	11.725	11.725	11.725				
I:Q847S	Amps	8.820	8.760	11.760	11.760				
I:Q848S	Amps	28.360	28.200	25.200	28.900	3.700	32.060		35.560
I:Q849S	Amps	0.000	0.200	8.200	4.700	-3.500	-3.500		0.000
I:Q850S	Amps	15.020	14.960	17.960	10.960	-7.000	8.020		11.520
I:Q851S	Amps	28.400	28.240	34.240	22.140	-12.100	16.300		19.800
I:Q852S	Amps	9.380	9.400	14.400	12.900	-1.500	7.880		11.380

B:Q800	AMP	255.295	255.500	255.500	255.500				
B:Q801	AMP	215.500	213.750	213.750	213.750				
B:Q802	AMP	186.903	184.406	184.406	184.406				
B:Q803	AMPS	85.101	85.988	102.988	111.488	8.500	93.601		
I:Q847	AMP	173.901	172.225	181.225	181.225			3.500	177.401

Quad strengths

	Serial#	MTF data T-M/amp	Length, IN	Length, M	T/M/A	KG/M/A	I90 value KG/M/A
Q800	SQA510	0.018721	16.65	0.42291	0.044267	0.441063	0.447266
Q801	SQC022	0.028728	26.25	0.66675	0.043087	0.430866	0.446339
Q802	SQA509	0.01868	16.65	0.42291	0.044170	0.441701	0.447374
Q803	SQA001	0.018787	16.65	0.42291	0.044423	0.444231	0.427074
Q804	SQC402	0.02823	26.25	0.66675	0.042340	0.423395	0.437167
Q805	SQC001	0.028905	26.25	0.66675	0.043352	0.433521	0.447916
Q806	SQF001	0.052093	48	1.2192	0.042727	0.429618	0.408975
Q807	SQF002	0.052093	48	1.2192	0.042727	0.429429	0.412073
Q808	SQC205	0.028656	26.25	0.66675	0.042979	0.431796	0.447115
Q809	SQA501	0.018746	16.65	0.42291	0.044326	0.443262	0.44732

Q847	SQA511	0.018682	16.65	0.42291	0.044175	0.441748	0.442445
Q848	SQA514	0.018698	16.65	0.42291	0.044213	0.442127	0.442445
Q849	SQA517	0.018708	16.65	0.42291	0.044236	0.442363	0.442445
Q850	SQA507	0.018665	16.65	0.42291	0.044135	0.441346	0.442445
Q851	SQA516	0.018718	16.65	0.42291	0.044260	0.442600	0.442445
Q852	SQA512	0.018648	16.65	0.42291	0.044094	0.440944	0.442445