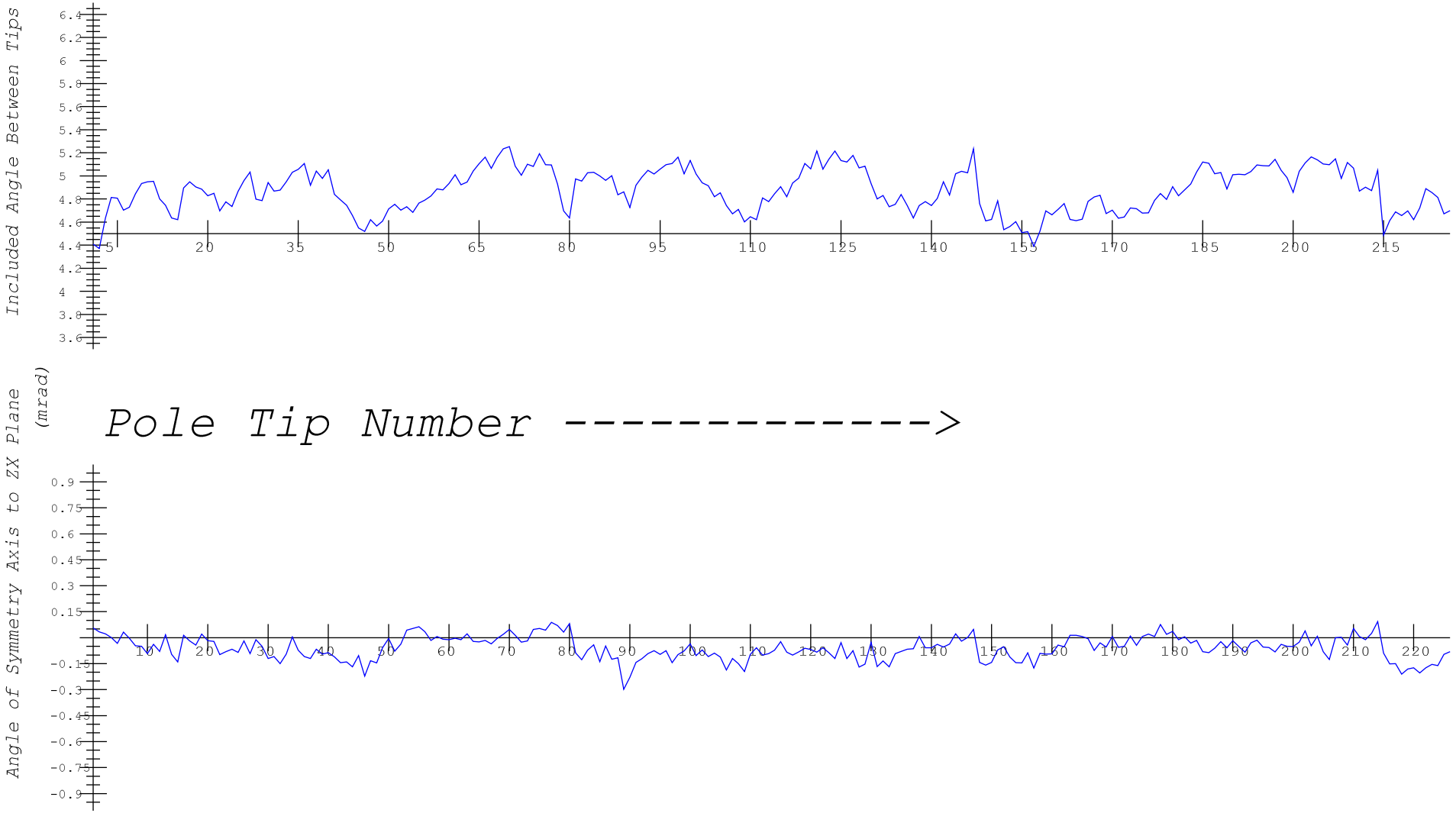
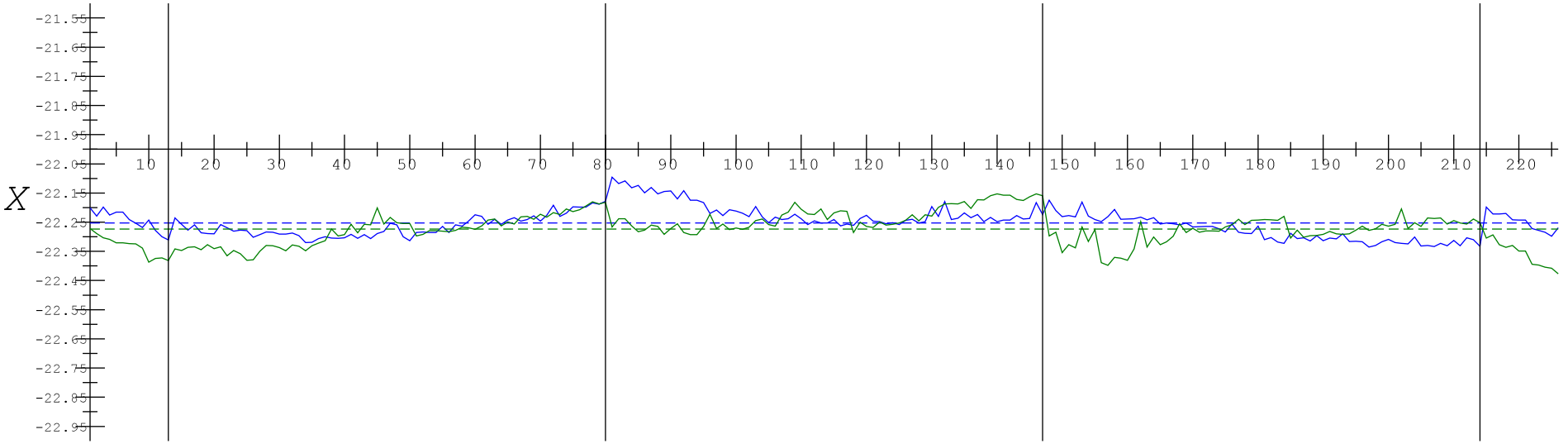


Symmetry Axis is the symmetry axis between the Upper and Lower Pole Tips
Included Angle is the angle between the Upper and Lower Pole Tips

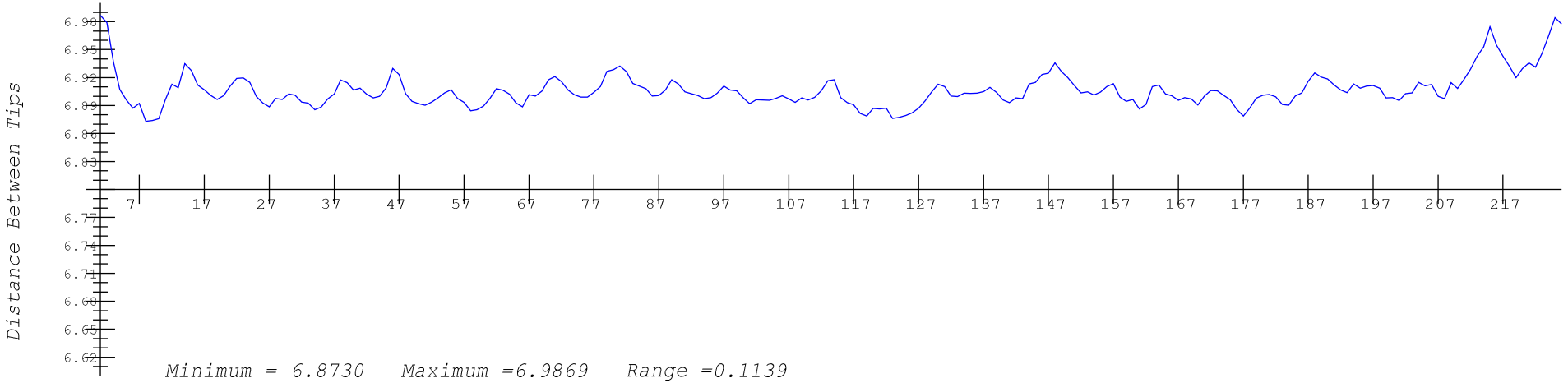
SLAC LCLS-MMF LEITZ CMM	*Undulator Pole Tip Angles* *Post Magnetic Alignment*	*DATE:21-APR-2008* *UNDULATOR # 31* *DATASET # 0001* *PROGRAM VERSION 2.7*

Pole Tip Number ---------->



X values in mm
Green Solid = Point on front face of Upper Pole Tip 10mm above Magnetic C/L
Green Dash = Mean value of all Upper Pole Tips 10mm above Magnetic C/L Mean value Upper Pole Tips = -22.274
Blue Solid = Point on front face of Lower Pole Tip 10mm below Magnetic C/L
Blue Dash = Mean value of all Lower Pole Tips 10mm below Magnetic C/L Mean value Lower Pole Tips = -22.253

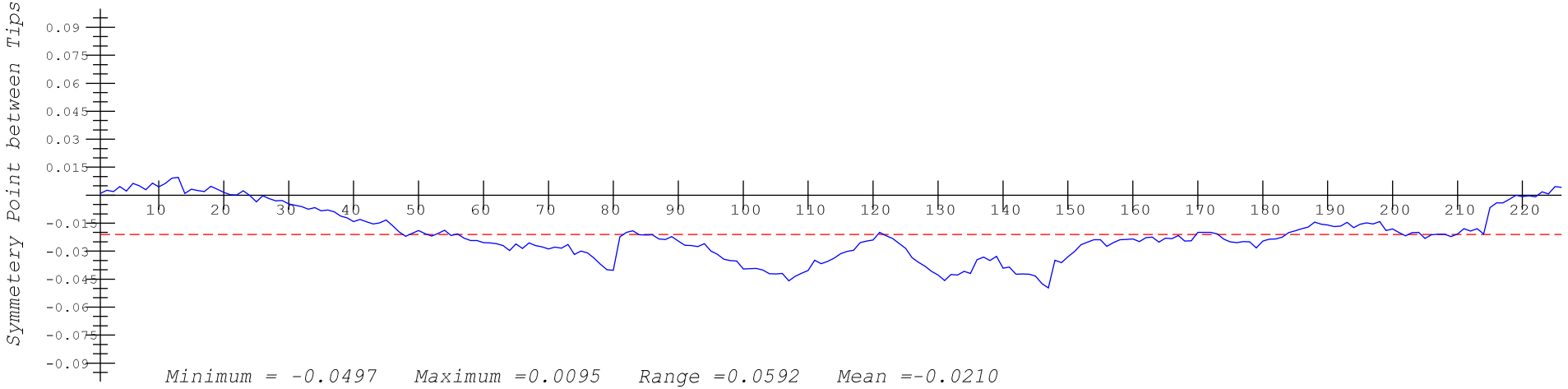
SLAC LCLS-MMF LEITZ CMM	Undulator Pole Tip Location Post Magnetic Alignment	DATE:21-APR-2008 UNDULATOR # 31 DATASET # 0001 PROGRAM VERSION 2.7



Minimum = 6.8730 Maximum =6.9869 Range =0.1139

Pole Tip Number ---------->

in mm

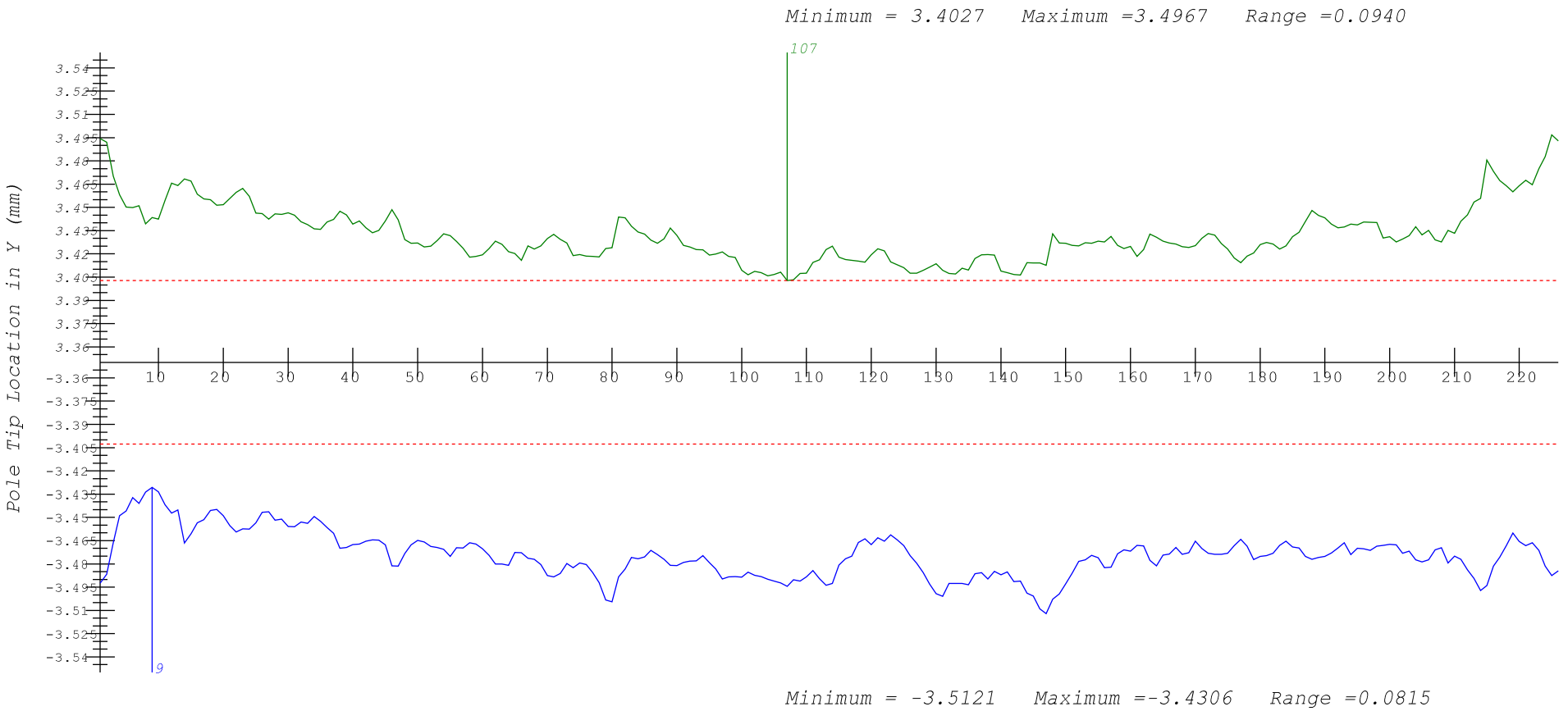


Minimum = -0.0497 Maximum =0.0095 Range =0.0592 Mean =-0.0210

Symmetry Point is the symmetry point between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C\L
Broken Red line is Mean Value of Symmetery Points
Distance Between Tips is the distance between the Upper and Lower Pole Tips were they intersect a YZ plane at the Magnetic C\L

SLAC LCLS-MMF LEITZ CMM	*Undulator Pole Tip Location* *Post Magnetic Alignment*	*DATE:21-APR-2008* *UNDULATOR # 31* *DATASET # 0001* *PROGRAM VERSION 2.7*

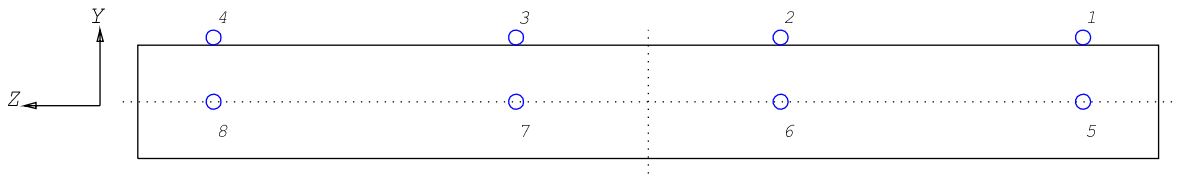
Maximum Chamber Gap = 6.8055



Pole Tip Number ---------->

Green = The position of the Upper Pole Tips at Magnetic C\L
Blue = The position of the Lower Pole Tips at Magnetic C\L
*Max. Chamber Gap = The maximum width vacuum chamber that will fit centered on the Magentic C\L (2*Min. Dev. from C\L)*

SLAC LCLS-MMF LEITZ CMM	*Undulator Pole Tip Location* *Post Magnetic Alignment*	*DATE:21-APR-2008* *UNDULATOR # 31* *DATASET # 0001* *PROGRAM VERSION 2.7*

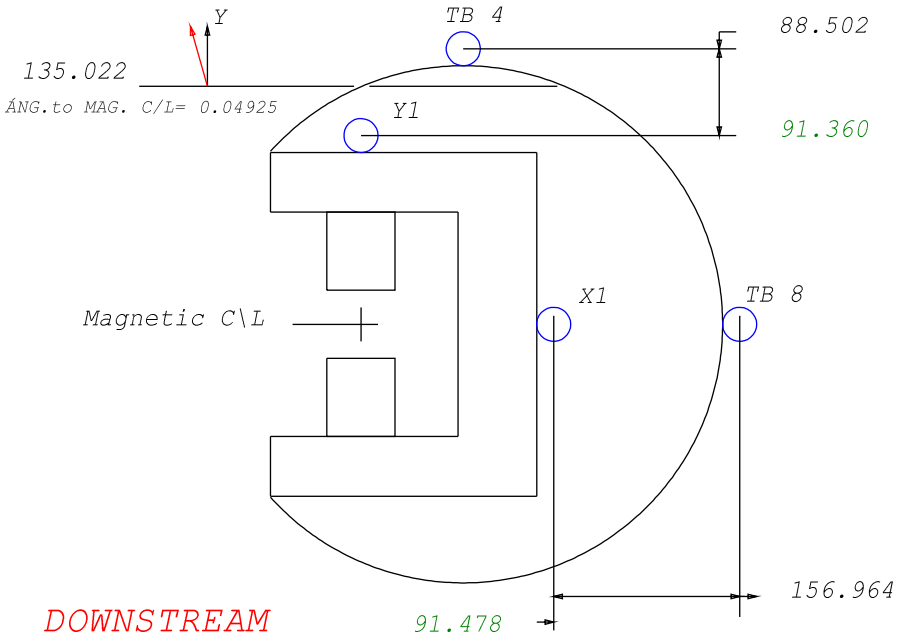


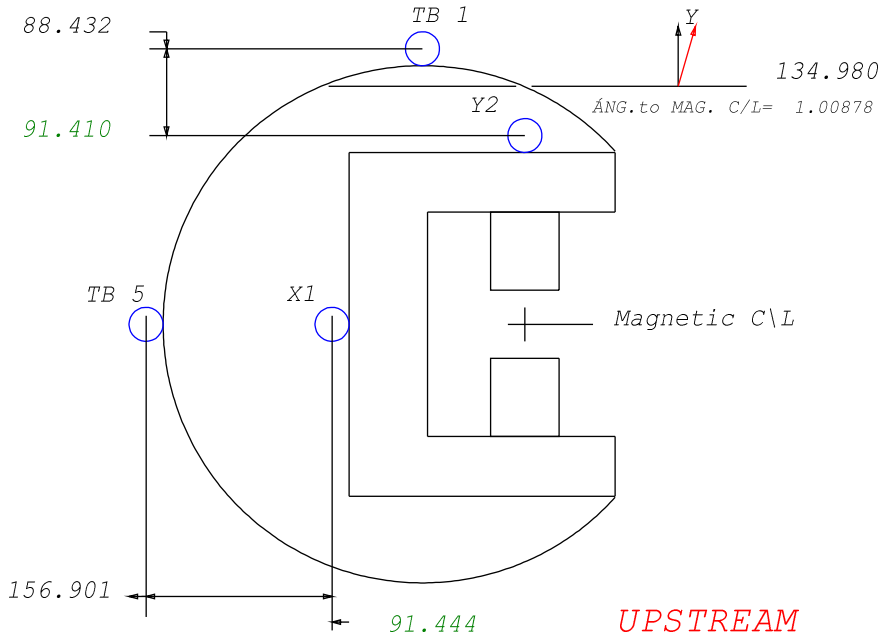
TOOLING BALL LOCATIONS

NUM.	X	Y	Z
1	0.0458	179.8425	-1558.281
2	0.2126	179.7683	-584.7577
3	0.2666	179.7302	591.3317
4	0.2965	179.8620	1562.1932
5	248.3454	0.0324	-1558.364
6	248.4088	0.0542	-584.7510
7	248.4619	0.0166	591.3668
8	248.4419	0.0429	1562.1967

	C\L Offset	Length
Top Magnetic Structure	-0.022	3381.145
Bottom Magnetic Structure	0.022	3381.092
Strongback	0.297	3400.001

Dimensions in mm Angles in mrad





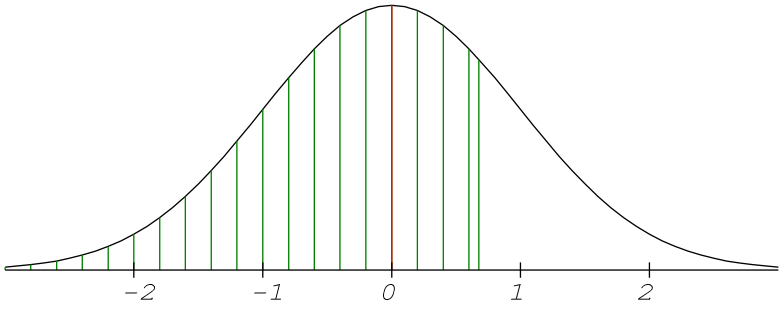
SLAC
LCLS-MMF
LEITZ CMM

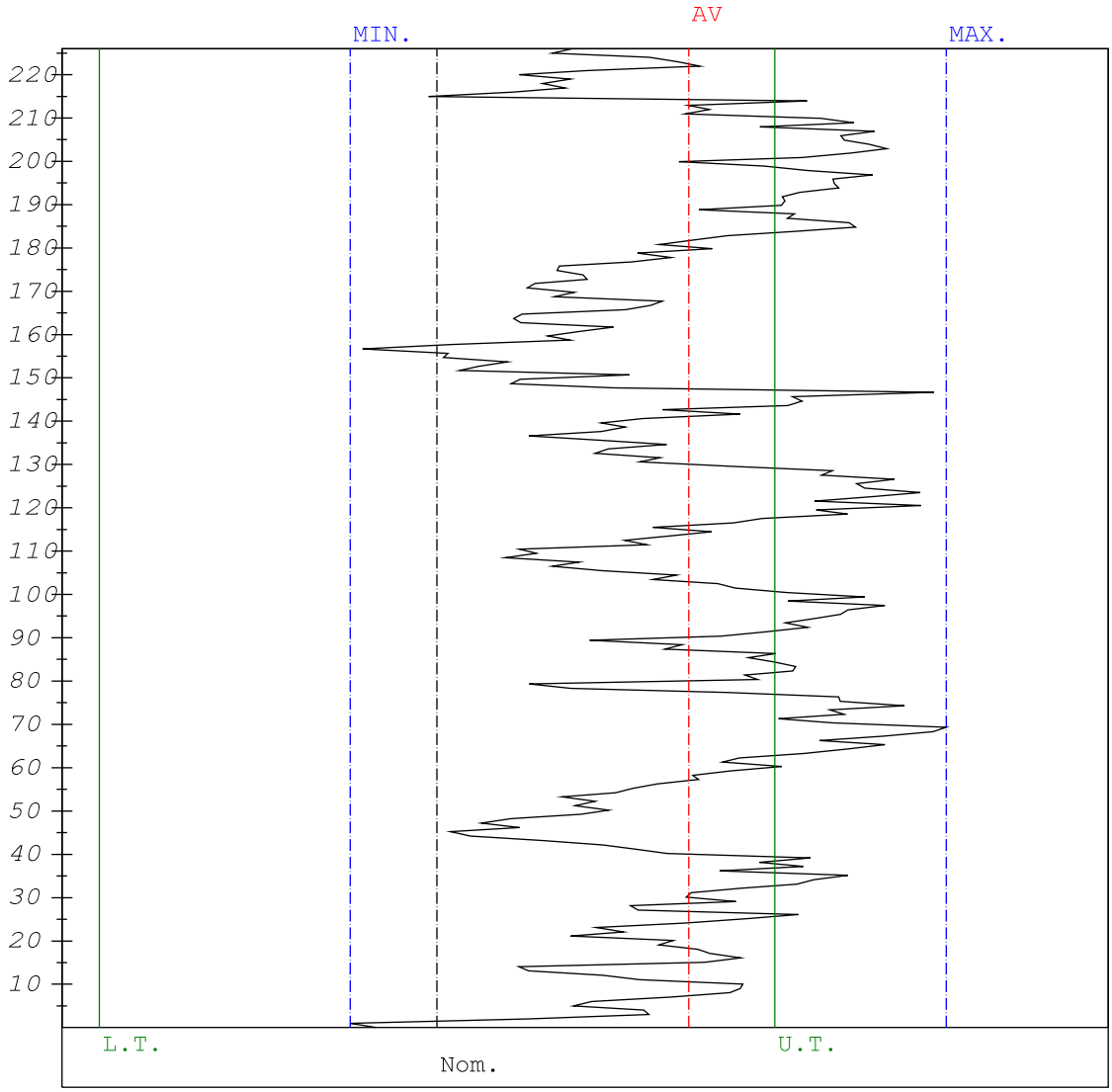
Undulator Dimensional Fiducialization
Post Magnetic Alignment

DATE:21-APR-2008

UNDULATOR # 31
DATASET # 0001

PROGRAM VERSION 2.7





Nominal : 4.5000	Averag :4.8724	Cent.-Dev. :0.3724
Up. Tol. :0.5	Maximum : 5.2539	U.Tol.Ex. > : 24.9 %
Low.Tol. :-0.5	Minimum : 4.3715	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.1886	In Tolerance: 75.1 %
Outlier : 0	Distribution : NOR	Dimension : mrad

SLAC LCLS-MMF LEITZ CMM	Statistical Evaluation Pole Tip Gap Angle *Post Magnetic Alignment*	*DATE:21-APR-2008* *UNDULATOR # 31* *DATASET # 0001* *PROGRAM VERSION 2.7*