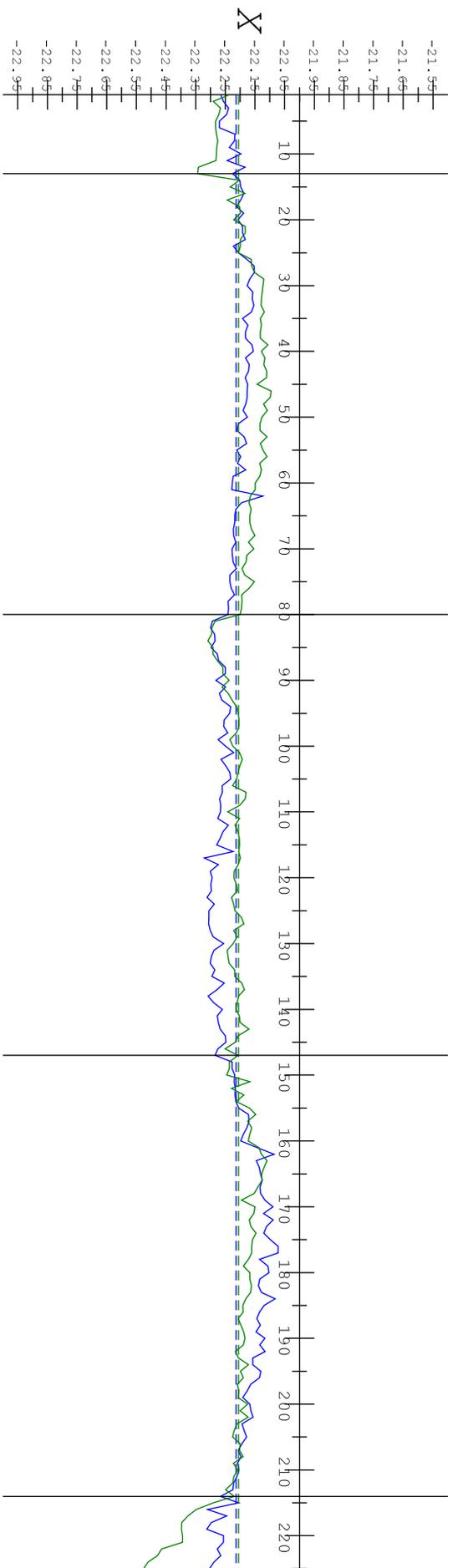


Pole Tip Number ----->

*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*

<p><b>SLAC</b> LCLS-MMF LEITZ CMM</p>	<p>Undulator Pole Tip Angles Post Magnetic Alignment</p>	<p>DATE: 08-MAY-2007 UNDULATOR # 13 VERSION 1.7</p>
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# Pole Tip Number ----->

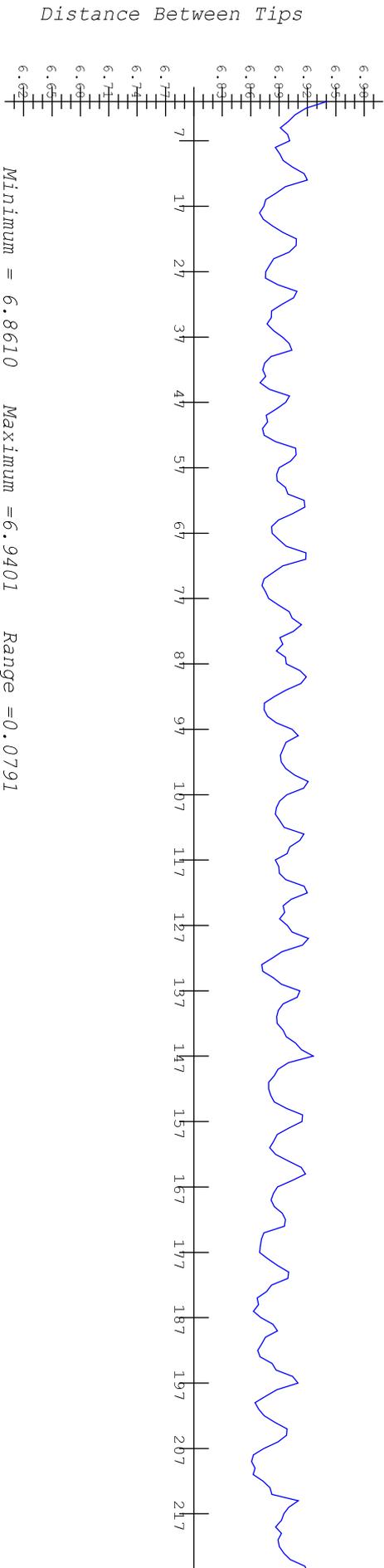


X values in mm  
 Green Solid = Point on front face of Upper Pole Tip 10mm above Magnetic C/L  
 Green Dash = Mean value of all Upper Pole Tips 10mm above Magnetic C/L Mean value Upper Pole Tips = -22.205  
 Blue Solid = Point on front face of Lower Pole Tip 10mm below Magnetic C/L  
 Blue Dash = Mean value of all Lower Pole Tips 10mm below Magnetic C/L Mean value Lower Pole Tips = -22.214

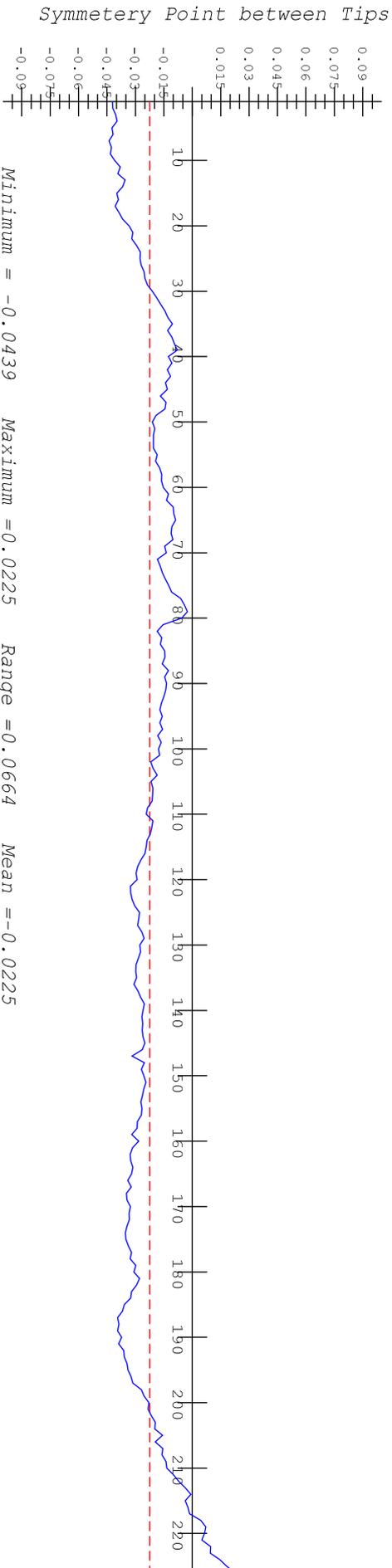
**SLAC**  
 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Location  
 Post Magnetic Alignment

DATE: 08-MAY-2007  
 UNDUULATOR # 13  
 VERSION 1.7



Pole Tip Number ----->



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 Symmetry 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

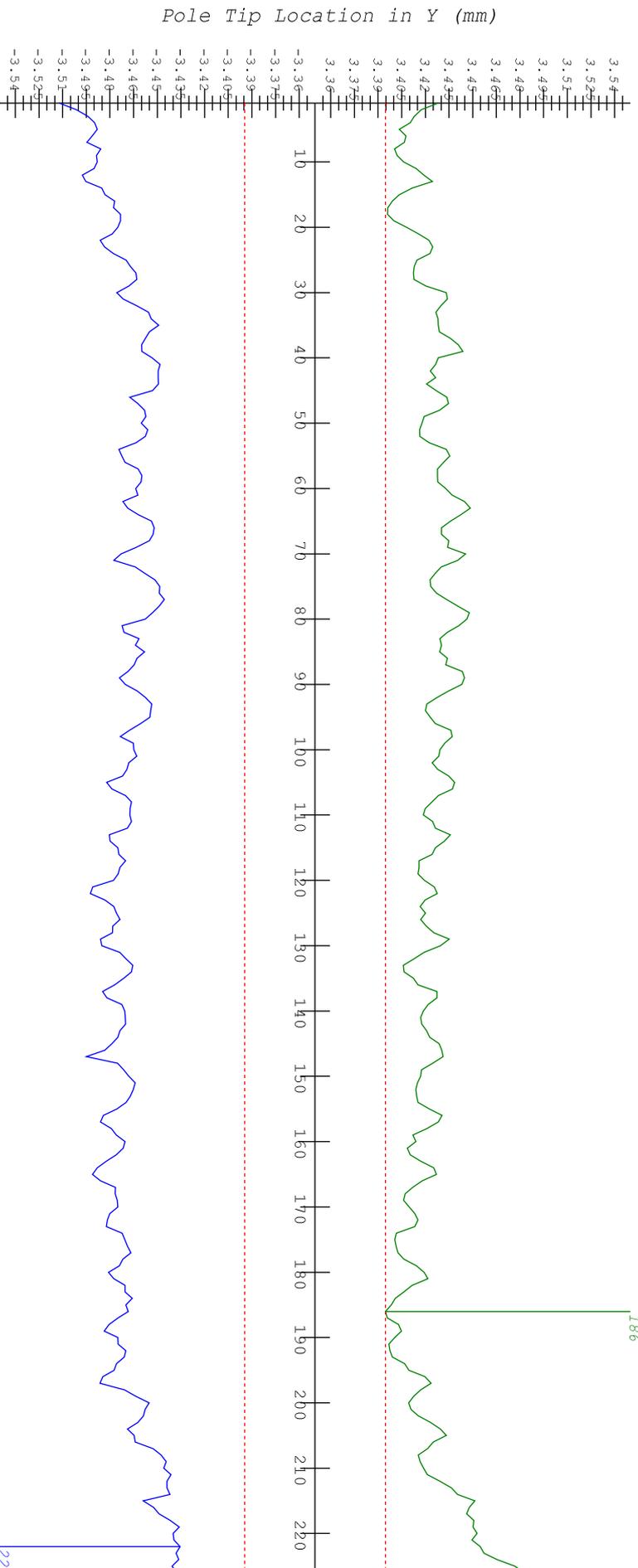
**SLAC**  
 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Location  
 Post Magnetic Alignment

DATE: 08-MAY-2007  
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Maximum Chamber Gap = 6.7892

Minimum = 3.3946    Maximum = 3.4826    Range = 0.0880



Minimum = -3.5122    Maximum = -3.4355    Range = 0.0767

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 Magnetic C\L (2\*Min. Dev. from C\L)

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LCLS-MMF  
LEITZ CMM

Undulator Pole Tip Location  
Post Magnetic Alignment

DATE: 08-MAY-2007  
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VERSION 1.7



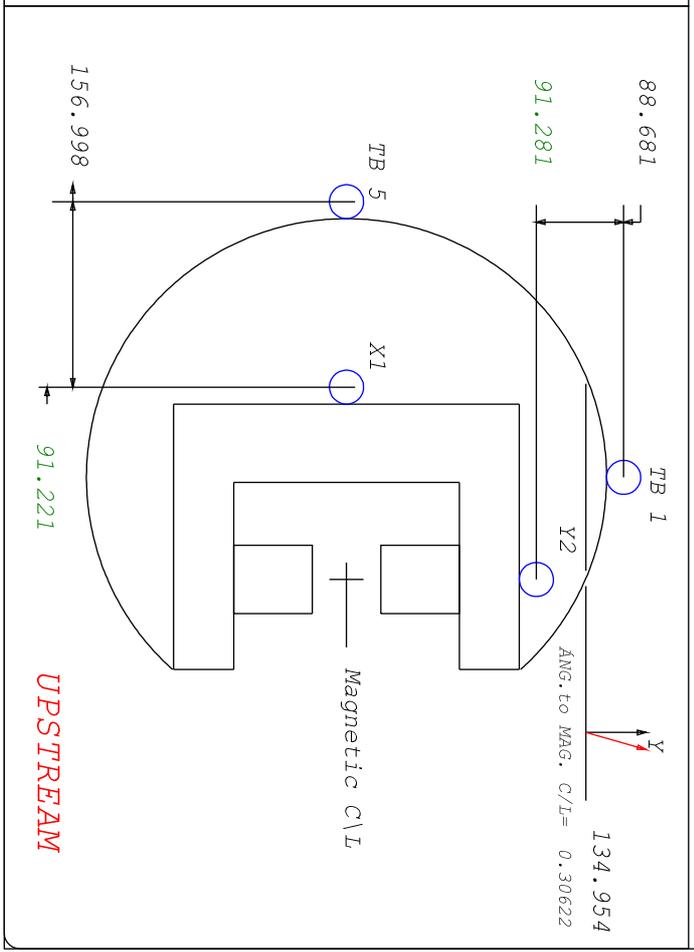
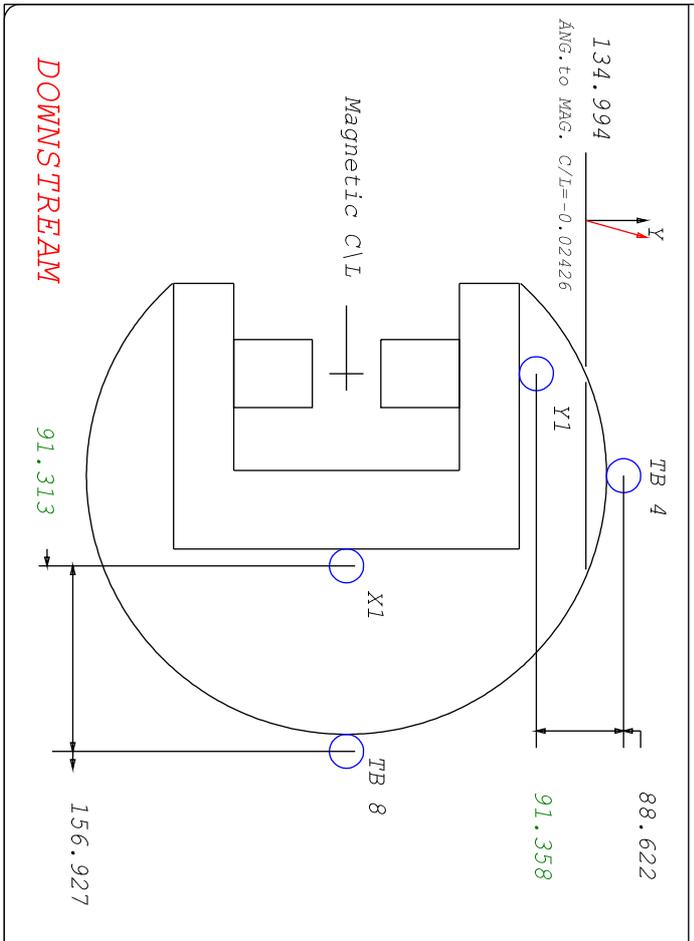
TOOLING BALL LOCATIONS

NUM.	X	Y	Z
1	-0.1050	179.9624	-1558.290
2	0.0350	179.9911	-584.4590
3	-0.0746	179.8867	591.3048
4	-0.1151	179.9800	1562.0815
5	248.2189	0.0507	-1558.361
6	248.1729	-0.0486	-584.6015
7	248.1902	0.0251	591.3285
8	248.2403	-0.0824	1562.0891

	C/L Offset	Length
Top Magnetic Structure	-0.096	3381.071
Bottom Magnetic Structure	0.096	3381.295
Strongback	0.267	3399.790

Dimensions in mm

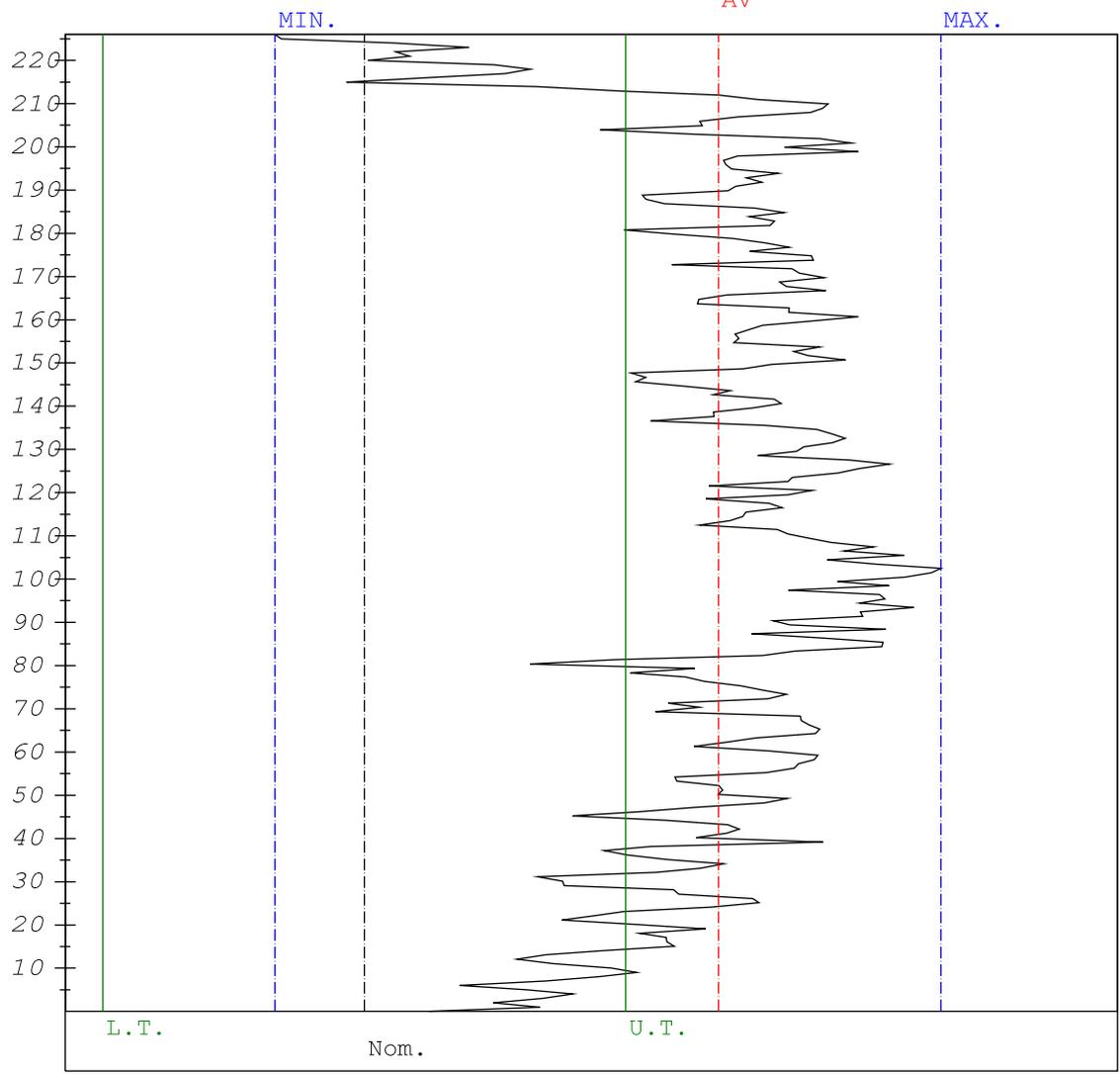
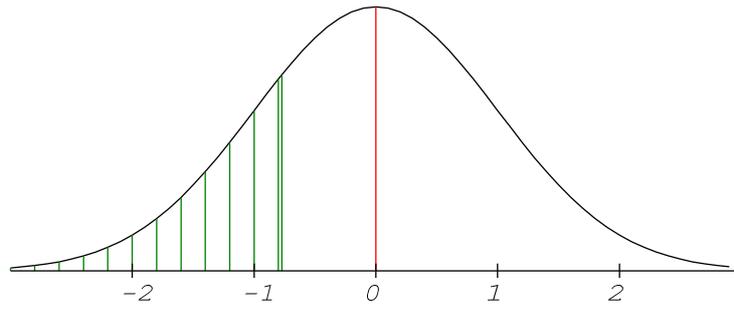
Angles in mrad



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LEITZ CMM

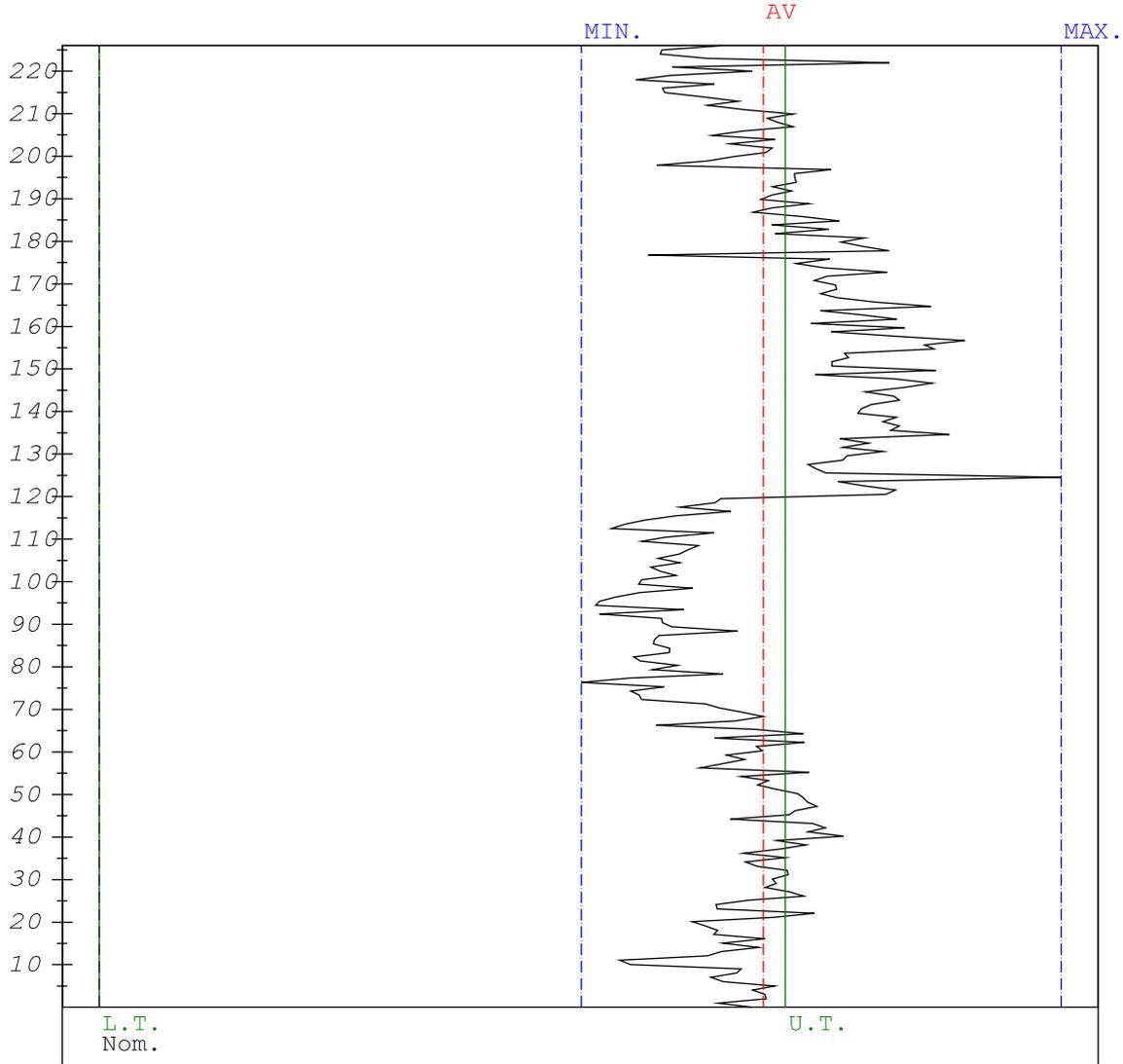
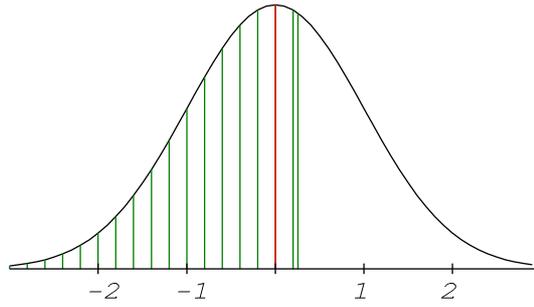
Undulator Dimensional Fiducialization  
Post Magnetic Alignment

DATE: 08-MAY-2007  
UNDULATOR # 13  
VERSION 1.7



Nominal : 4.5000	Averag : 5.1777	Cent.-Dev. : 0.6777
Up. Tol. : 0.5	Maximum : 5.6030	U.Tol.Ex. > : 78.0 %
Low.Tol. : -0.5	Minimum : 4.3295	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.2303	In Tolerance: 22.0 %
Outlier : 0	Distribution : NOR	Dimension : mrad

<p><b>SLAC</b> LCLS-MMF LEITZ CMM</p>	<p>Statistical Evaluation Pole Tip Gap Angle Post Magnetic Alignment</p>	<p>DATE: 08-MAY-2007 UNDULATOR # 13 VERSION 1.7</p>
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Nominal : 0.0000	Averag : 0.0145	Cent.-Dev. : 0.007
Up. Tol. : 0.015	Maximum : 0.0210	U.Tol.Ex. > : 39.9 %
Low.Tol. : 0	Minimum : 0.0105	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.0019	In Tolerance: 60.1 %
Outlier : 0	Distribution : NOR	Dimension : mm

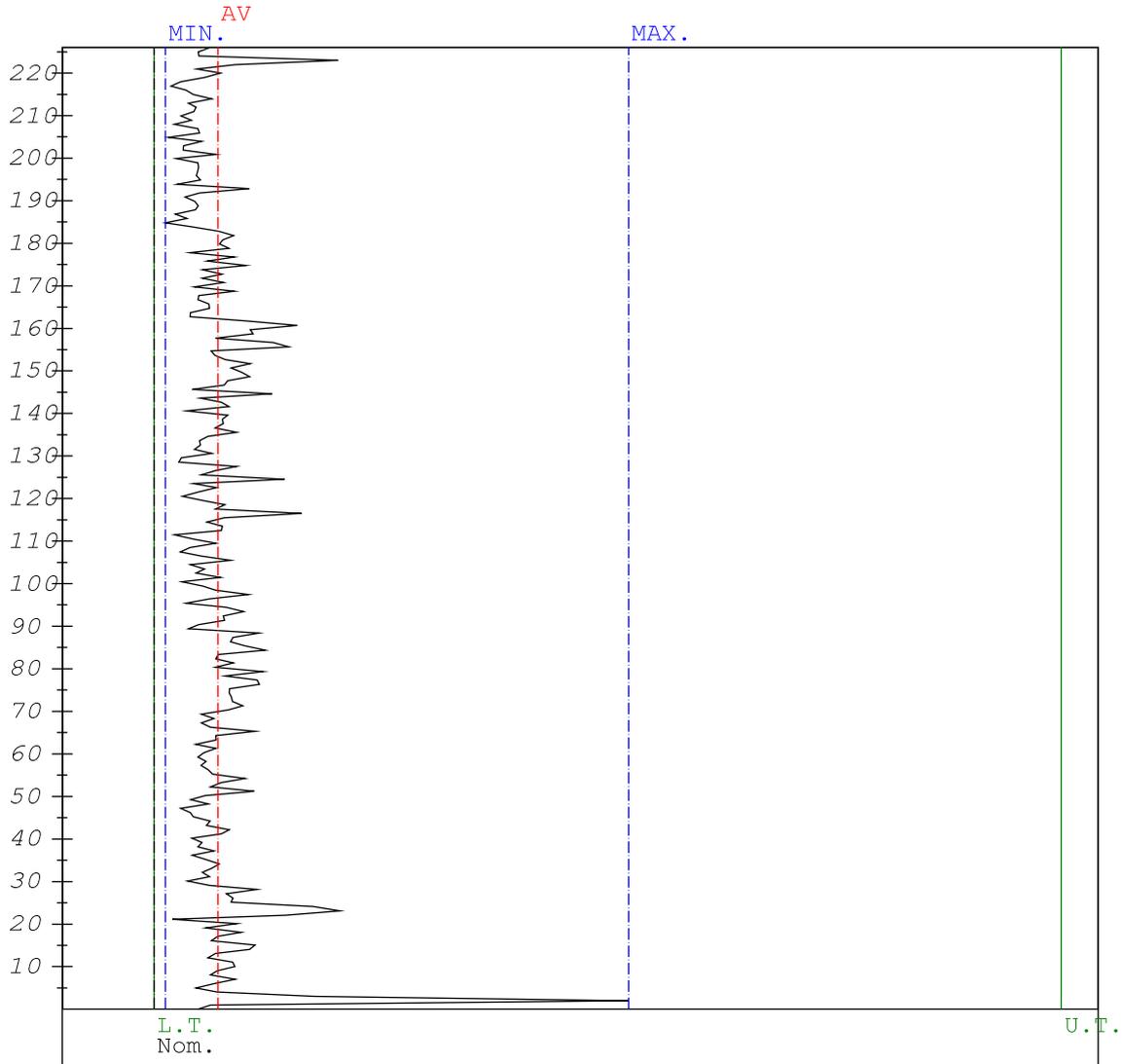
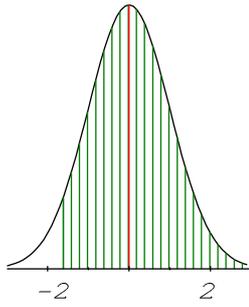
**SLAC**  
LCLS-MMF  
LEITZ CMM

Statistical Evaluation  
Top Pole Tip Form  
Post Magnetic Alignment

DATE: 08-MAY-2007

UNDULATOR # 13

VERSION 1.7



Nominal : 0.0000	Averag : 0.0011	Cent.-Dev. :-0.0064
Up. Tol. : 0.015	Maximum : 0.0079	U.Tol.Ex. > : 0.0 %
Low.Tol. : 0	Minimum : 0.0002	L.Tol.Ex. < : 5.2 %
Spl.Size : 226	Stand.-Dev.: 0.0007	In Tolerance: 94.8 %
Outlier : 0	Distribution : NOR	Dimension : mm

**SLAC**  
LCLS-MMF  
LEITZ CMM

Statistical Evaluation  
Bottom Pole Tip Form  
Post Magnetic Alignment

DATE:08-MAY-2007

UNDULATOR # 13

VERSION 1.7