

Pole Tip Number ----->

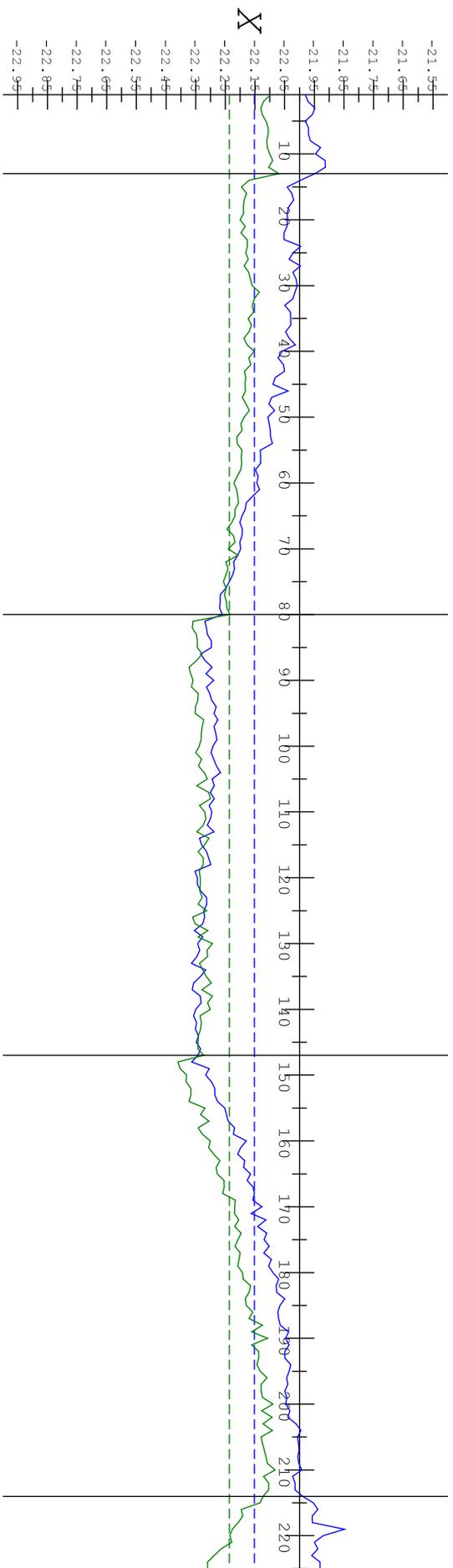
Symmetry Axis is the symmetry axis between the Upper and Lower Pole Tips  
 Included Angle is the angle between the Upper and Lower Pole Tips

**SLAC**  
 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Angles  
 Post Magnetic Alignment

DATE: 29-MAY-2007  
 UNDUULATOR # 19  
 VERSION 1.8

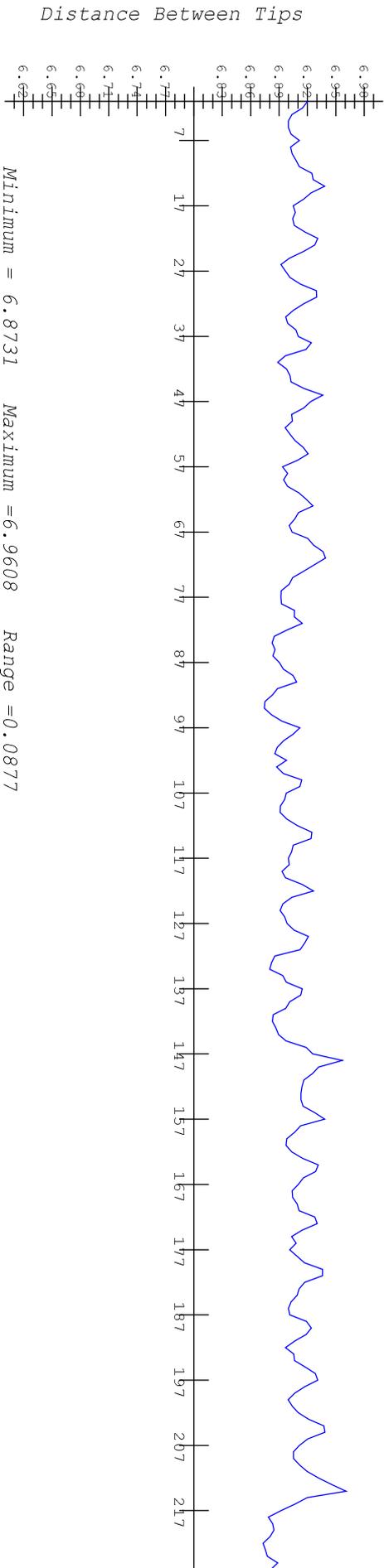
# Pole Tip Number ----->



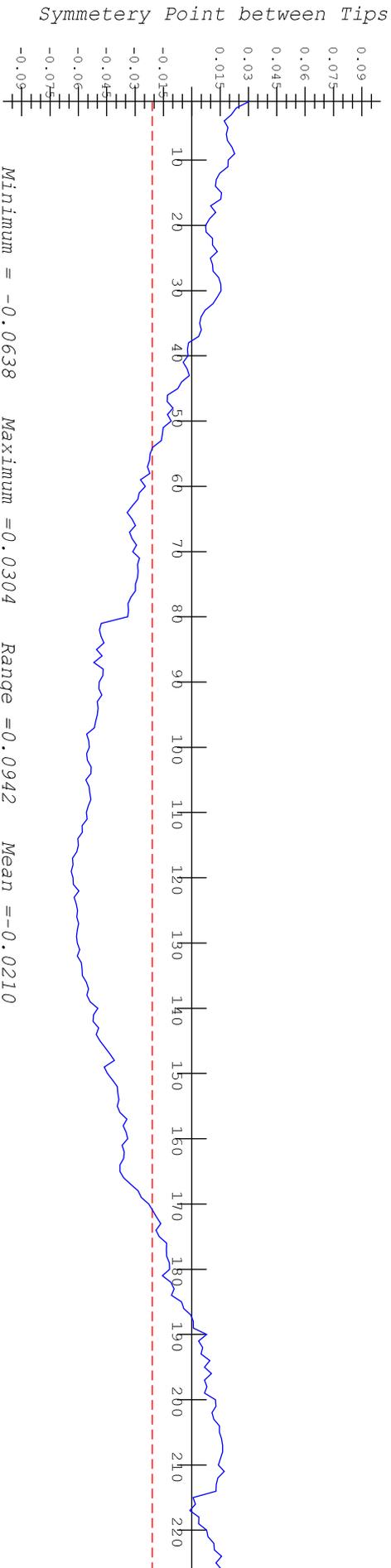
**SLAC**  
 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Location  
 Post Magnetic Alignment

DATE: 29-MAY-2007  
 UNDUULATOR # 19  
 VERSION 1.8



# 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

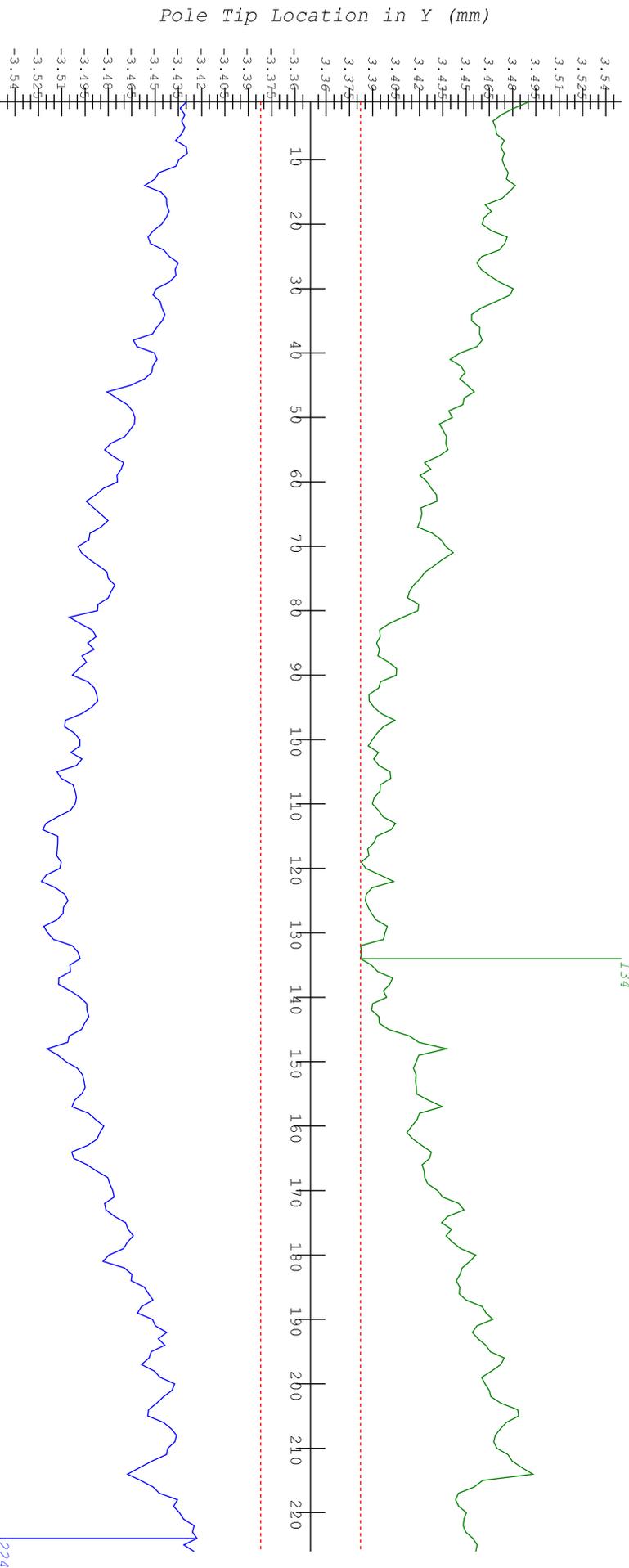
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Undulator Pole Tip Location  
 Post Magnetic Alignment

DATE: 29-MAY-2007  
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 VERSION 1.8

Maximum Chamber Gap = 6.7642

Minimum = 3.3821    Maximum = 3.4931    Range = 0.1110



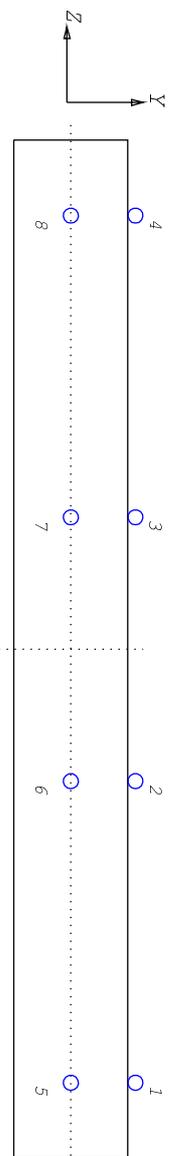
Pole Tip Number ----->

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)

**SLAC**  
LCLS-MMF  
LEITZ CMM

Undulator Pole Tip Location  
Post Magnetic Alignment

DATE: 29-MAY-2007  
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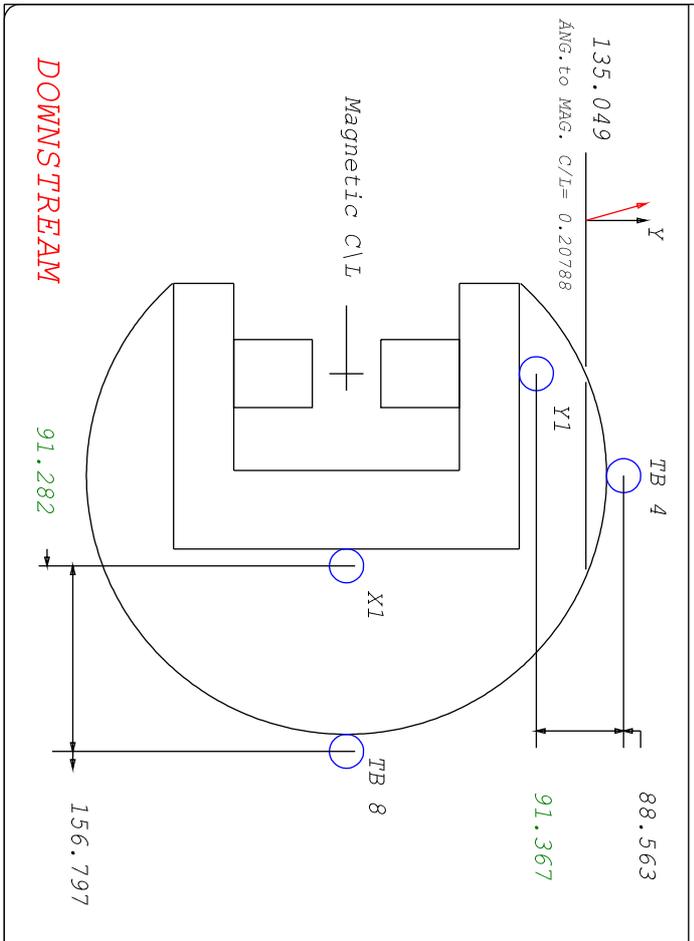
TOOLING BALL LOCATIONS

NUM.	X	Y	Z
1	0.0236	180.0613	-1558.289
2	-0.2486	179.8234	-584.6337
3	-0.4985	179.8885	591.2586
4	-0.0002	179.9303	1562.1218
5	248.1416	-0.0140	1558.224
6	248.0311	-0.0441	-584.5771
7	247.9459	-0.0216	591.3218
8	248.0794	0.0257	1562.1987

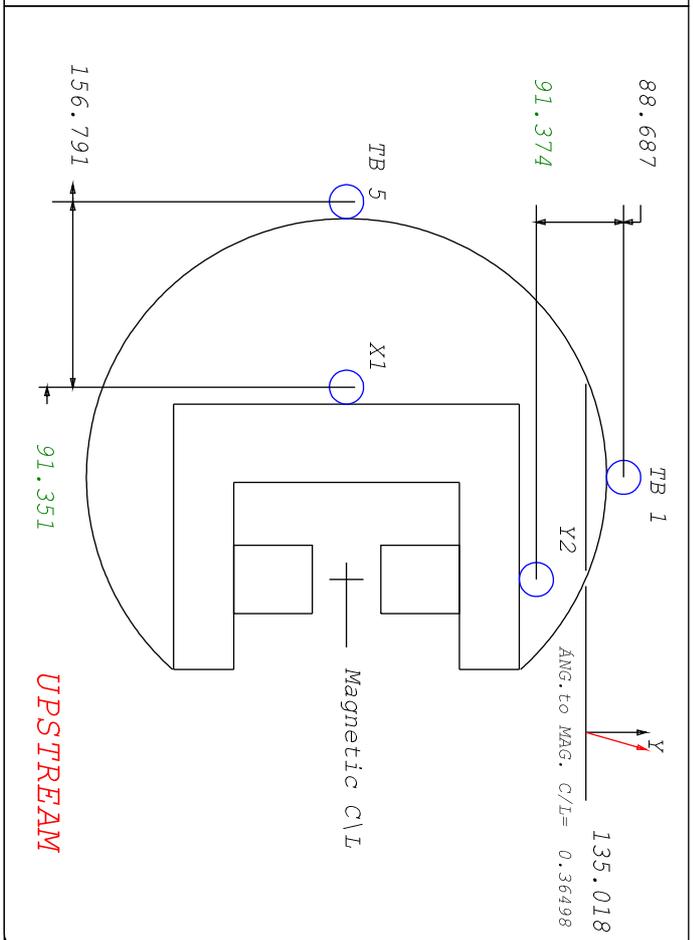
	C/L Offset	Length
Top Magnetic Structure	-0.024	3381.205
Bottom Magnetic Structure	0.024	3381.305
Strongback	0.272	3399.959

Dimensions in mm

Angles in mrad



DOWNSTREAM

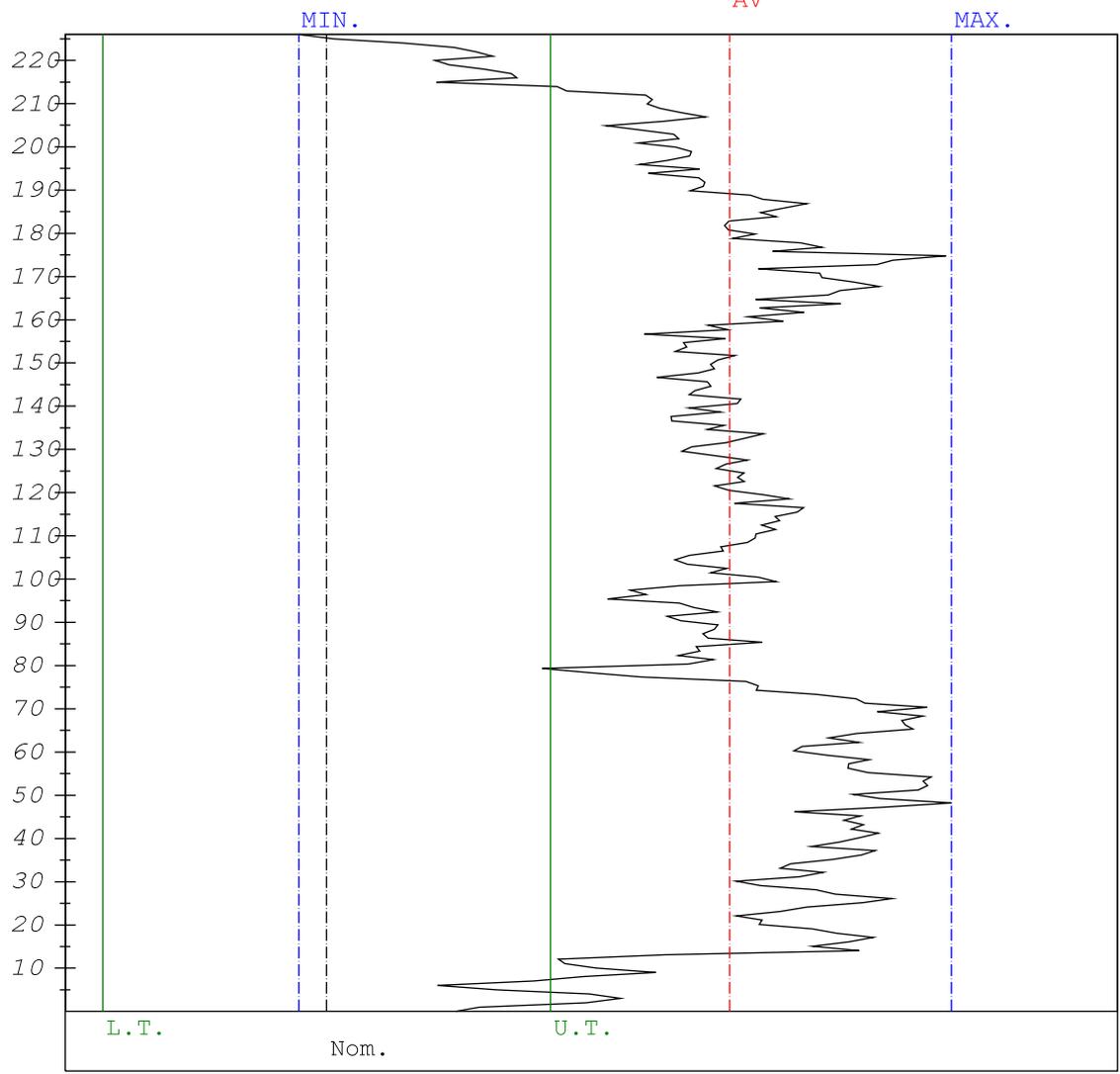
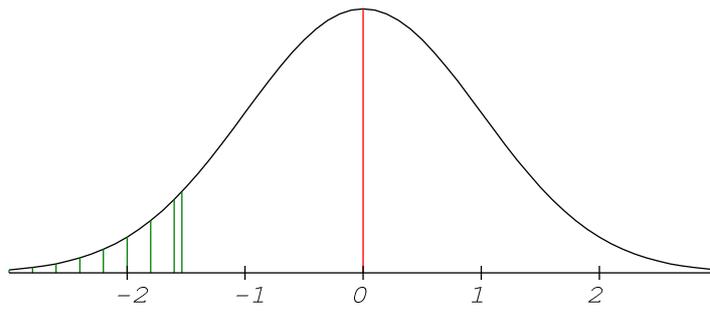


UPSTREAM

**SLAC**  
LCLS-MMF  
LEITZ CMM

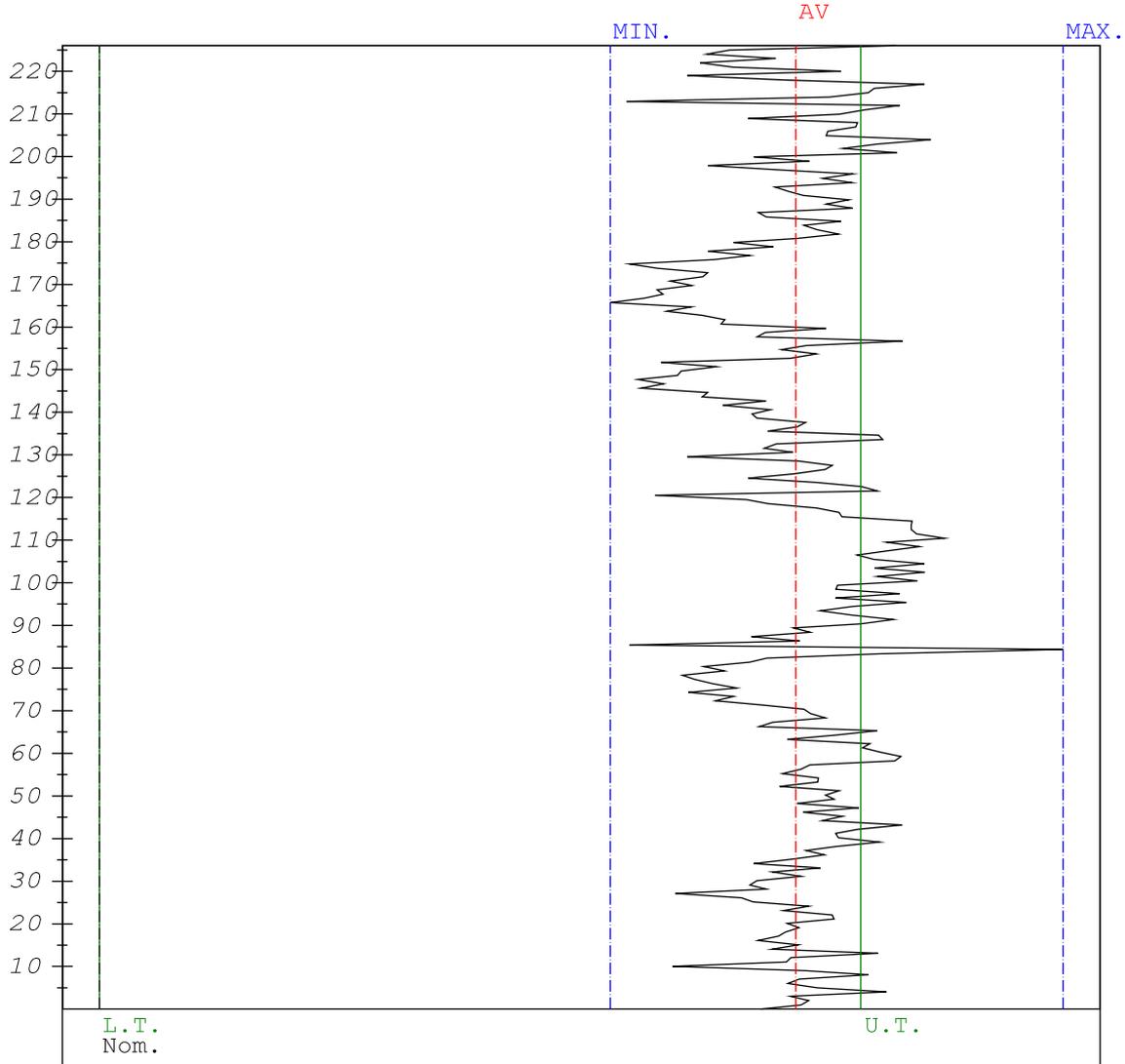
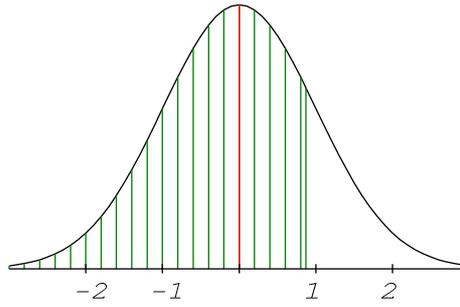
Undulator Dimensional Fiducialization  
Post Magnetic Alignment

DATE: 29-MAY-2007  
UNDULATOR # 19  
VERSION 1.8



Nominal : 4.5000	Averag : 5.4003	Cent.-Dev. : 0.9003
Up. Tol. : 0.5	Maximum : 5.8954	U.Tol.Ex. > : 93.8 %
Low.Tol. : -0.5	Minimum : 4.4376	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.2607	In Tolerance: 6.2 %
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: 29-MAY-2007 UNDULATOR # 19 VERSION 1.8</p>
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Nominal : 0.0000	Averag : 0.0137	Cent.-Dev. : 0.0062
Up. Tol. : 0.015	Maximum : 0.0190	U.Tol.Ex. > : 19.2 %
Low.Tol. : 0	Minimum : 0.0101	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.0015	In Tolerance: 80.8 %
Outlier : 0	Distribution : NOR	Dimension : mm

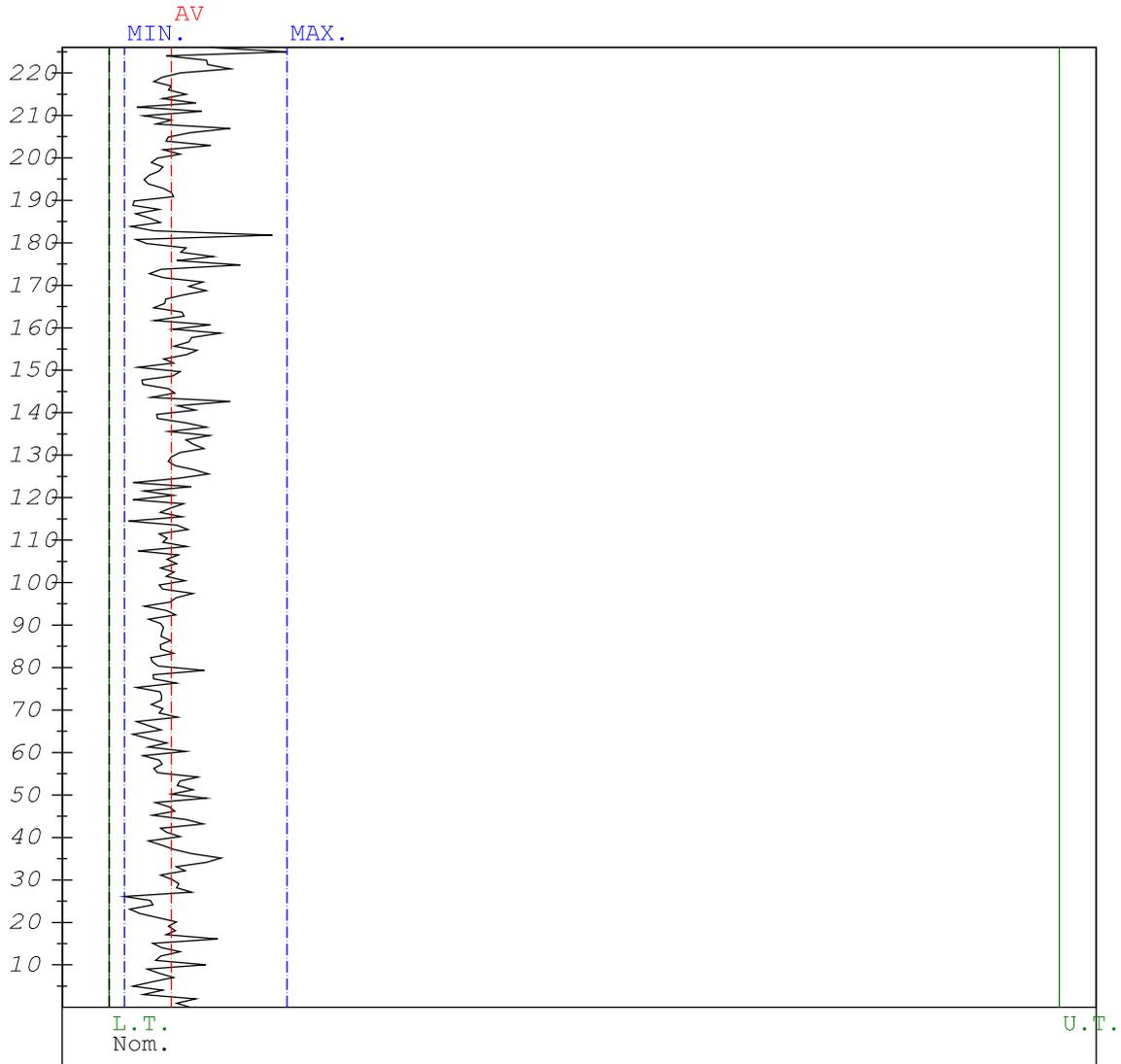
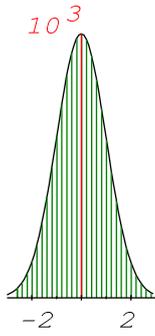
**SLAC**  
LCLS-MMF  
LEITZ CMM

Statistical Evaluation  
Top Pole Tip Form  
Post Magnetic Alignment

DATE: 29-MAY-2007

UNDULATOR # 19

VERSION 1.8



Nominal : 0.0000	Averag : 0.001	Cent.-Dev. :-0.0065
Up. Tol. : 0.015	Maximum : 0.0028	U.Tol.Ex. > : 0.0 %
Low.Tol. : 0	Minimum : 0.0002	L.Tol.Ex. < : 0.5 %
Spl.Size : 226	Stand.-Dev.: 0.0004	In Tolerance: 99.5 %
Outlier : 0	Distribution : NOR	Dimension : mm

<p><b>SLAC</b> LCLS-MMF LEITZ CMM</p>	<p>Statistical Evaluation Bottom Pole Tip Form Post Magnetic Alignment</p>	<p>DATE:29-MAY-2007 UNDULATOR # 19 VERSION 1.8</p>
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