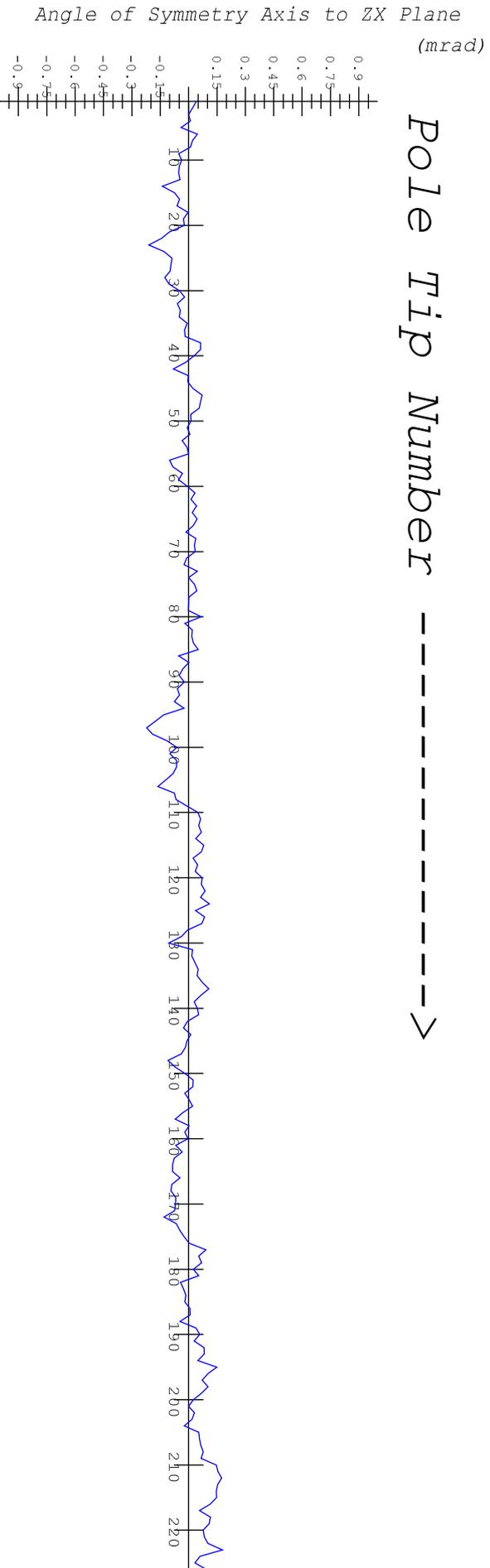


Pole Tip Number ----->



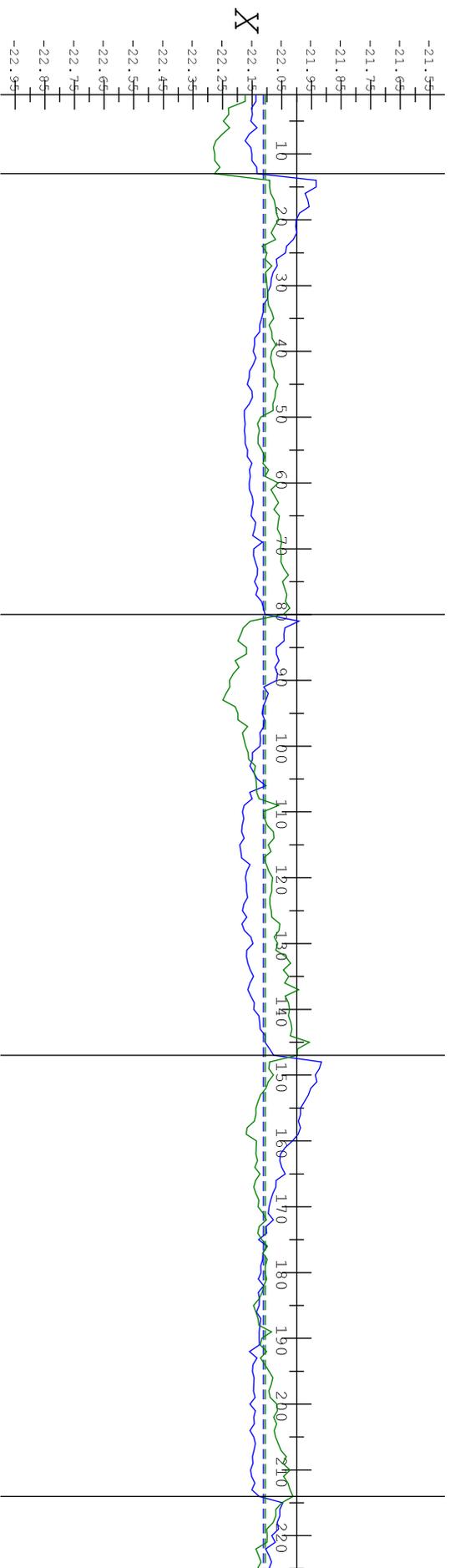
Symmetry Axis is the symmetry axis between the Upper and Lower Pole Tips  
 Included Angle is the angle between the Upper and Lower Pole Tips

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 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Angles  
 Post Magnetic Alignment

DATE: 21-DEC-2007  
 UNDULATOR # 20  
 DATASET # 0002  
 PROGRAM VERSION 2.5

# 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 = -22.106

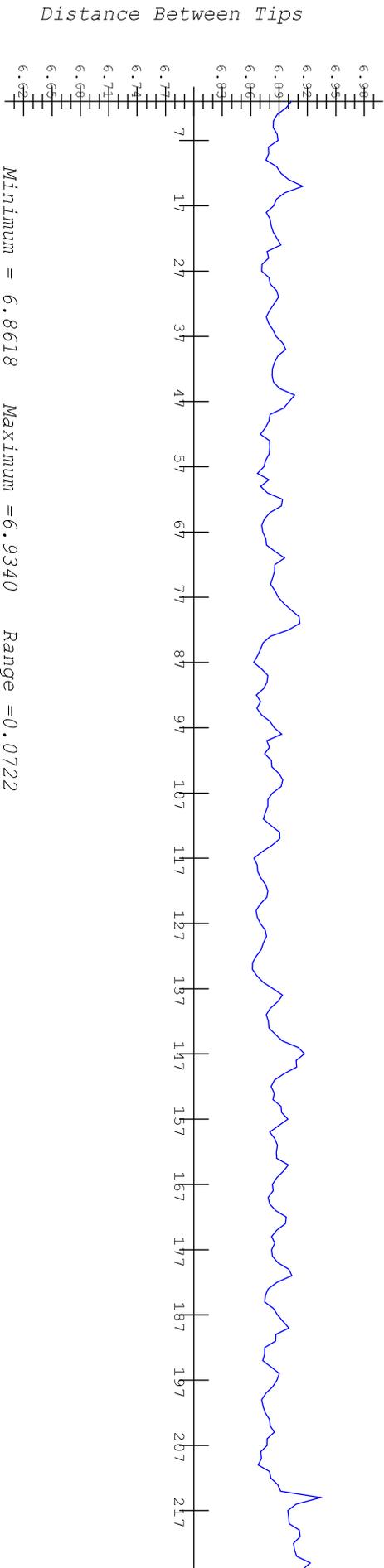
Blue Solid = Point on front face of Lower Pole Tip 10mm below Magnetic C/L

Blue Dash = Mean value of all Lower Pole Tips 10mm below Magnetic C/L Mean value Lower Pole Tips = -22.112

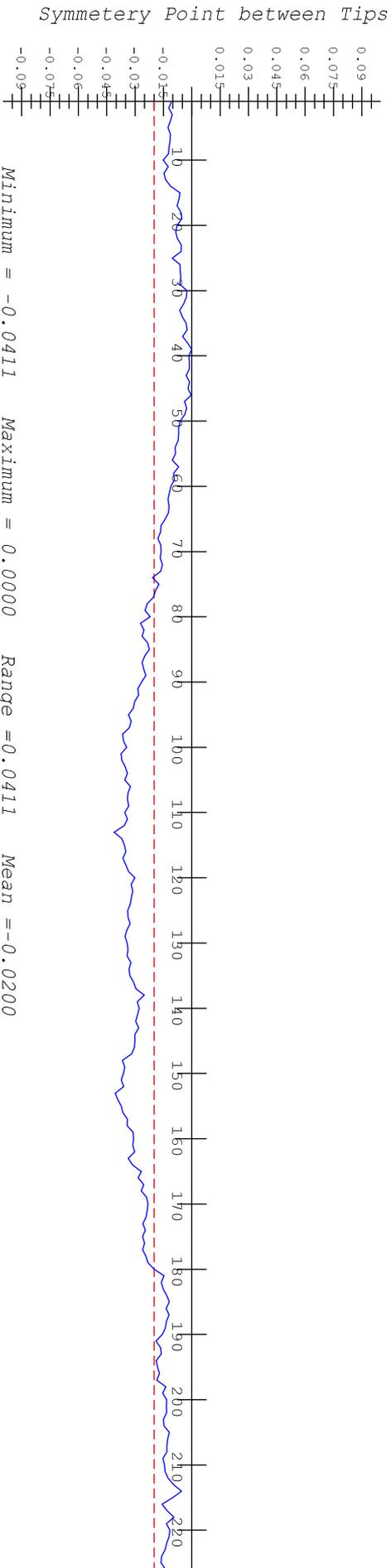
**SLAC**  
 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Location  
 Post Magnetic Alignment

DATE: 21-DEC-2007  
 UNDULATOR # 20  
 DATASET # 0002  
 PROGRAM VERSION 2.5



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

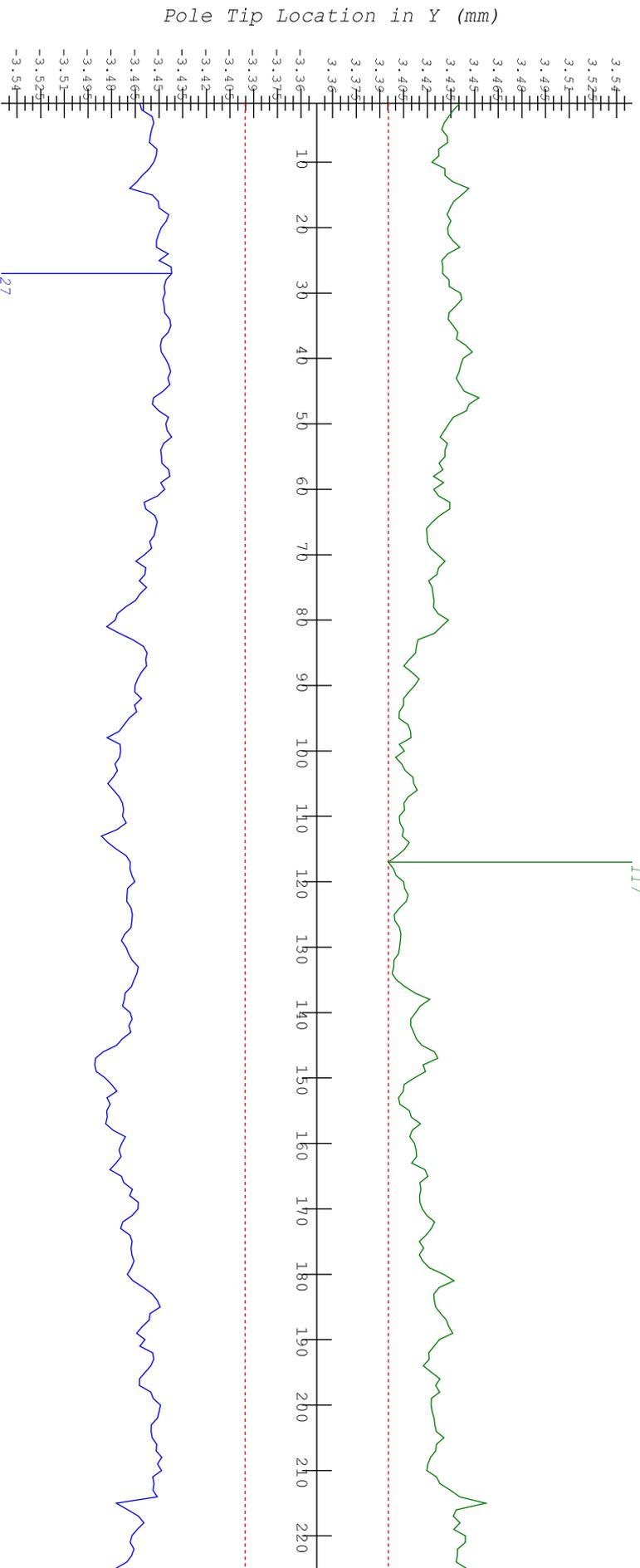
**SLAC**  
 LCLS-MMF  
 LEITZ CMM

Undulator Pole Tip Location  
 Post Magnetic Alignment

DATE: 21-DEC-2007  
 UNDUULATOR # 20  
 DATASET # 0002  
 PROGRAM VERSION 2.5

Maximum Chamber Gap = 6.7907

Minimum = 3.3954    Maximum = 3.4570    Range = 0.0617



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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LEITZ CMM

Undulator Pole Tip Location  
Post Magnetic Alignment

DATE: 21-DEC-2007  
UNDULATOR # 20  
DATASET # 0002  
PROGRAM VERSION 2.5



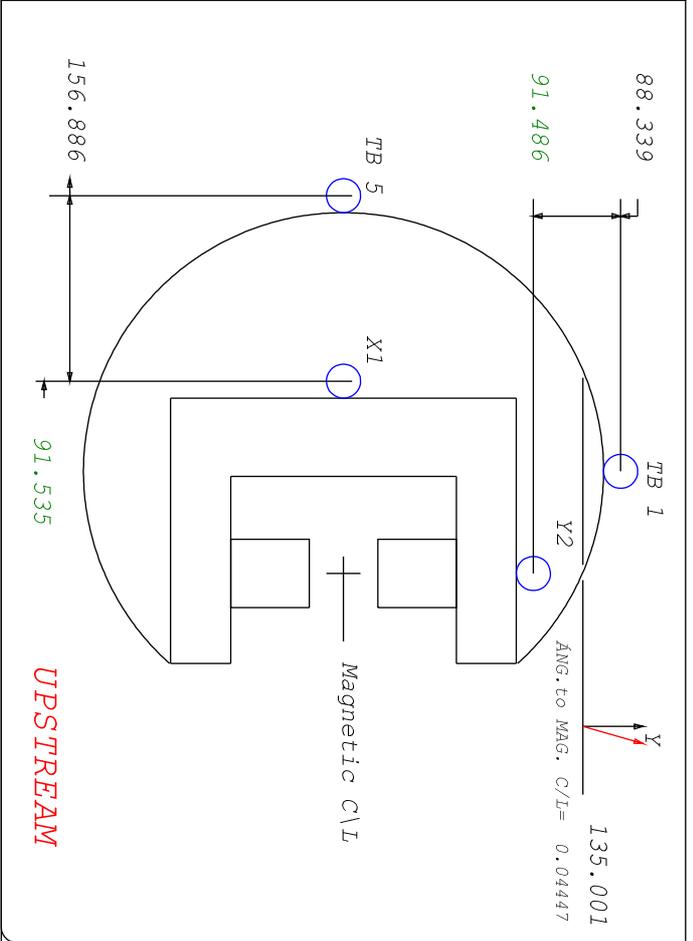
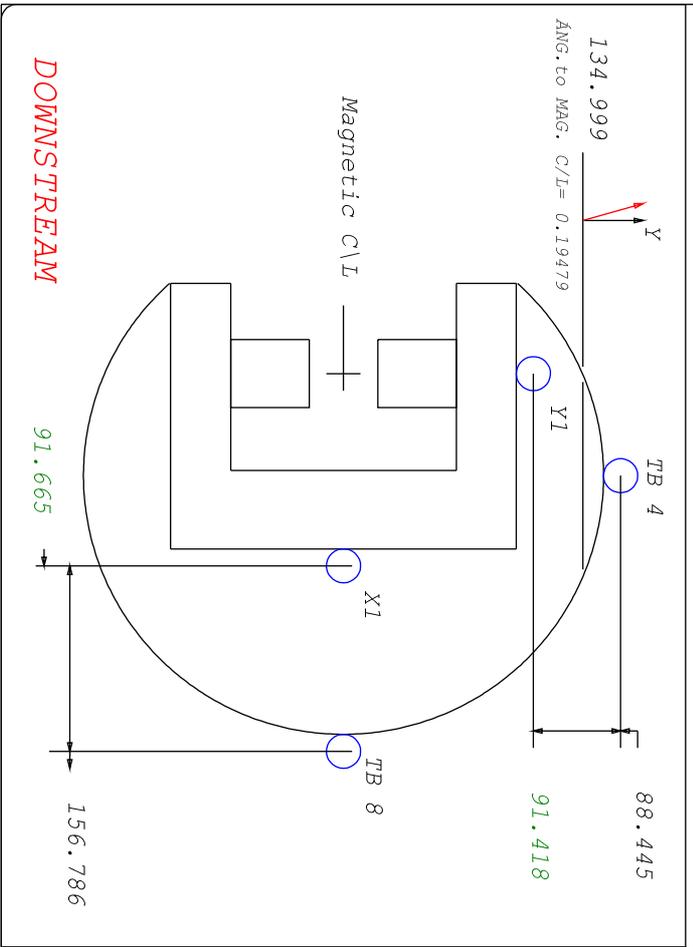
TOOLING BALL LOCATIONS

NUM.	X	Y	Z
1	0.0328	179.8247	-1558.365
2	0.1962	179.7317	-584.7343
3	0.2110	179.7491	591.2142
4	0.3161	179.8624	1562.1282
5	248.4218	0.1064	-1558.287
6	248.4511	0.0373	-584.7489
7	248.4320	0.1014	591.4042
8	248.4506	0.0676	1562.2148

	C/L Offset	Length
Top Magnetic Structure	-0.061	3380.912
Bottom Magnetic Structure	0.061	3381.135
Strongback	0.331	3400.001

Dimensions in mm

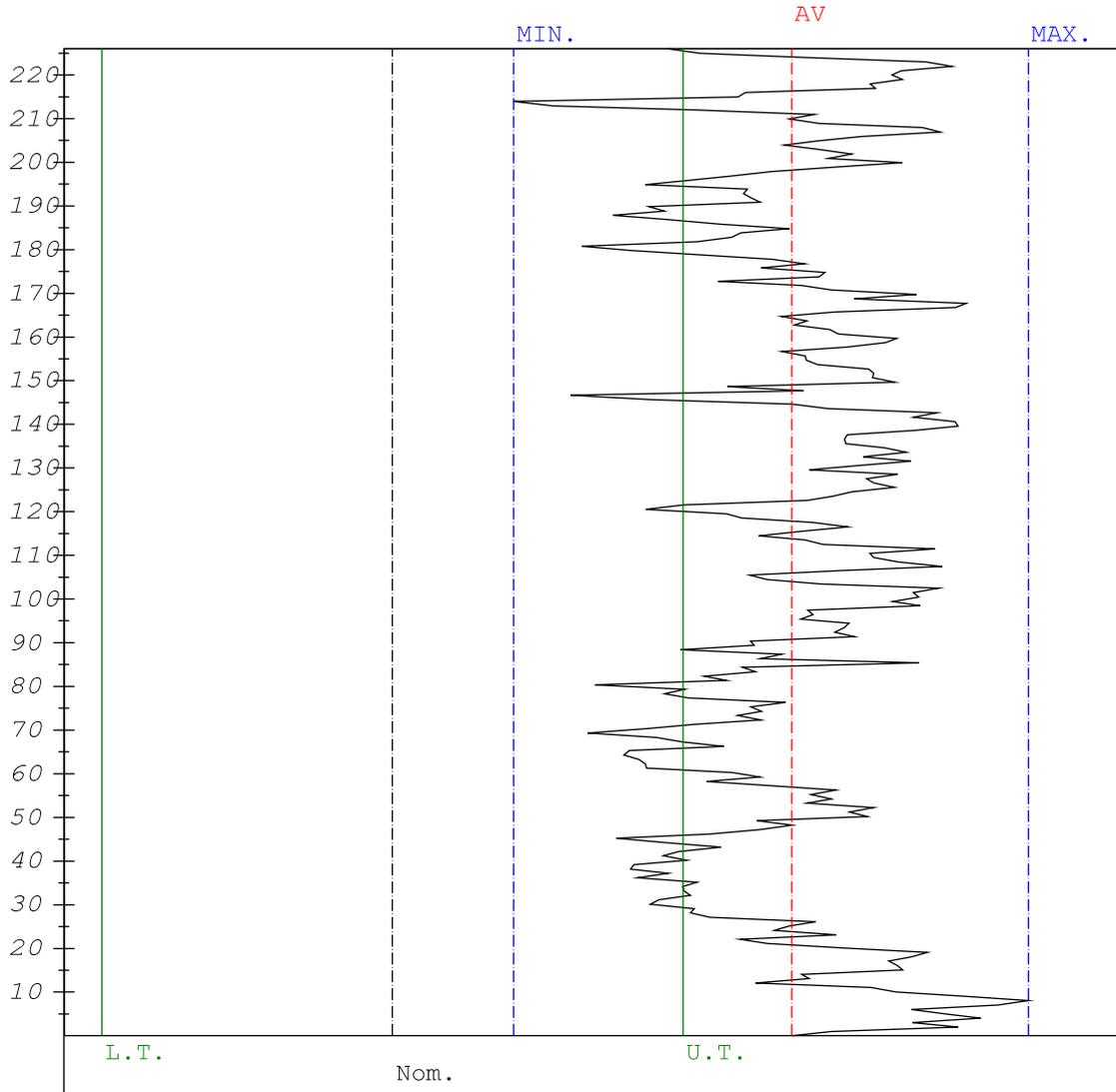
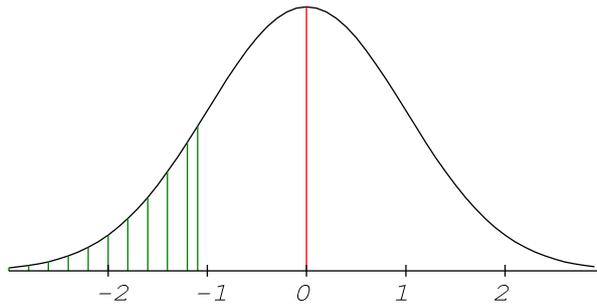
Angles in mrad



**SLAC**  
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LEITZ CMM

Undulator Dimensional Fiducialization  
Post Magnetic Alignment

DATE: 21-DEC-2007  
UNDULATOR # 20  
DATASET # 0002  
PROGRAM VERSION 2.5



Nominal : 4.5000	Averag : 5.1871	Cent.-Dev. : 0.6871
Up. Tol. : 0.5	Maximum : 5.5939	U.Tol.Ex. > : 86.4 %
Low.Tol. : -0.5	Minimum : 4.7083	L.Tol.Ex. < : 0.0 %
Spl.Size : 226	Stand.-Dev.: 0.1706	In Tolerance: 13.6 %
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: 21-DEC-2007 UNDULATOR # 20 DATASET # 0002 PROGRAM VERSION 2.5</p>
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