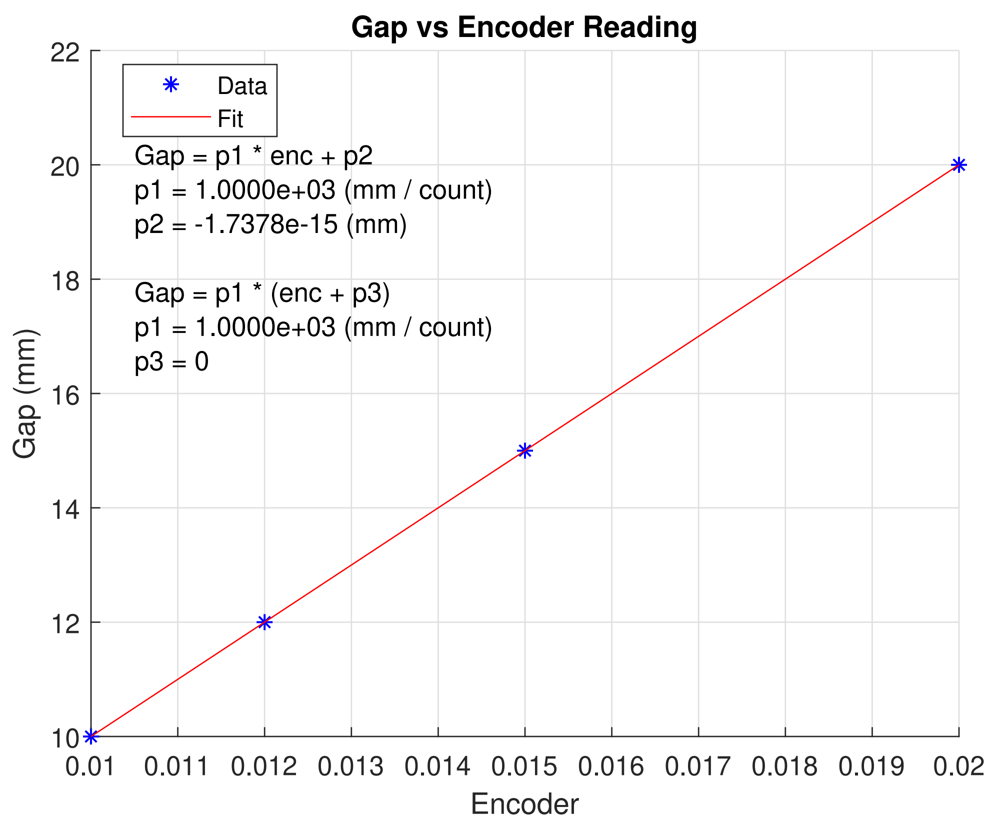
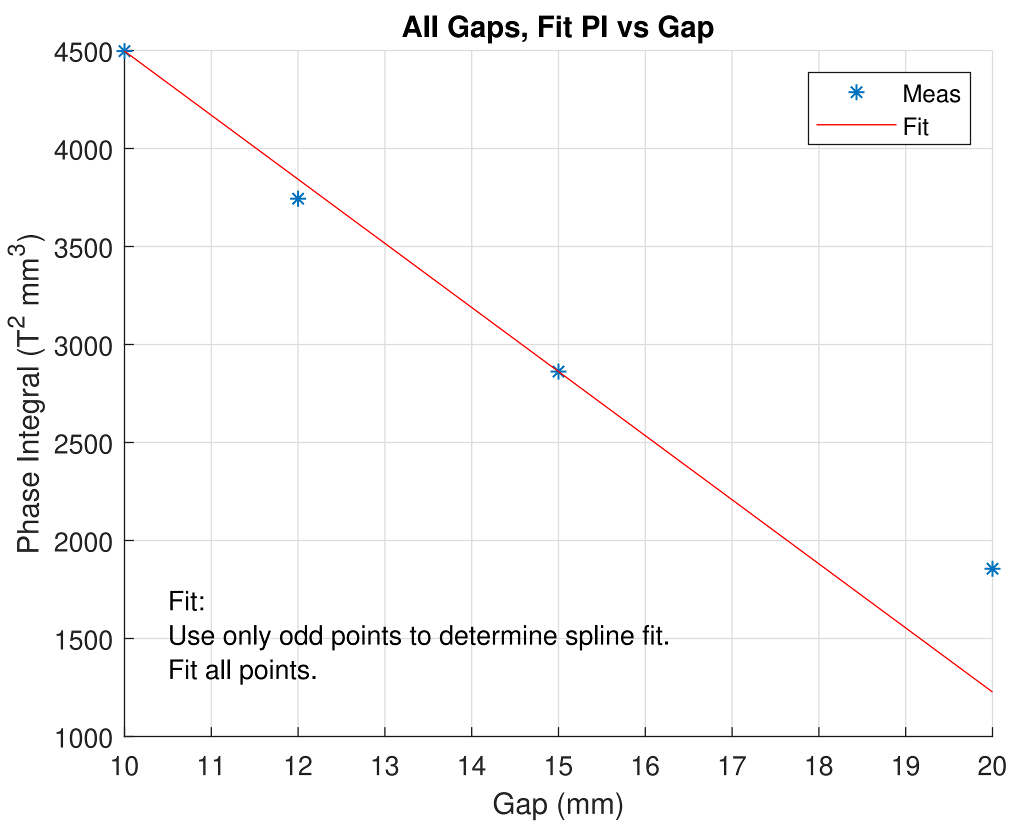
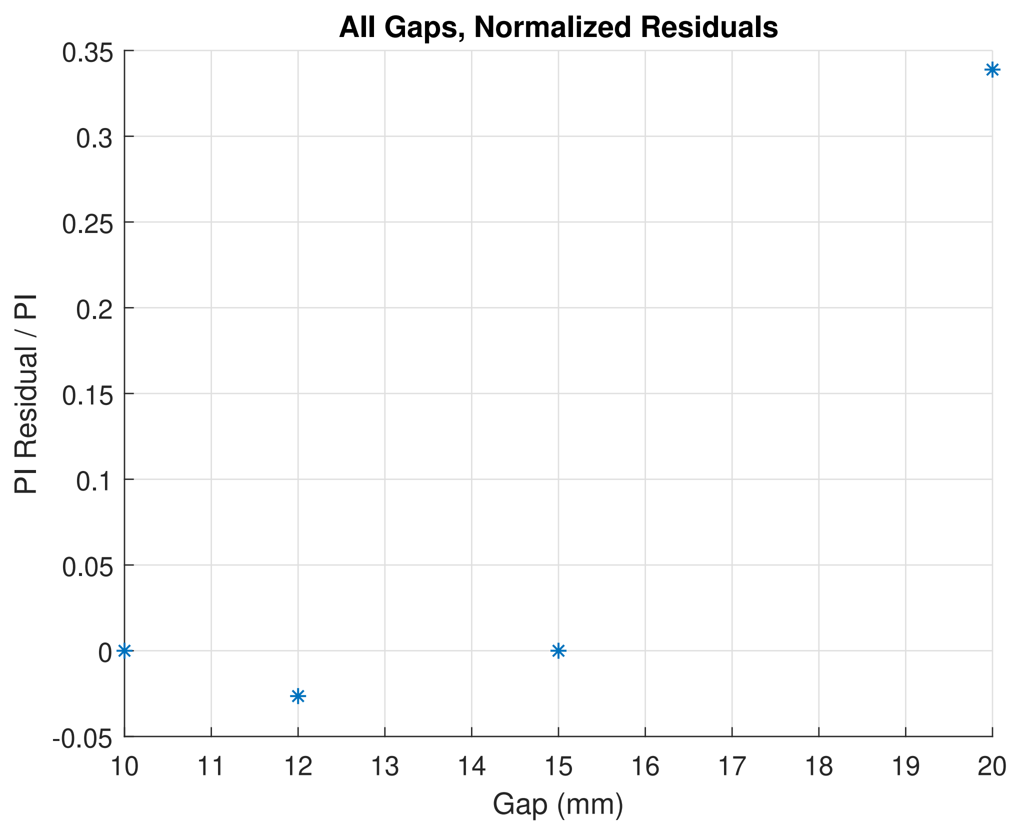
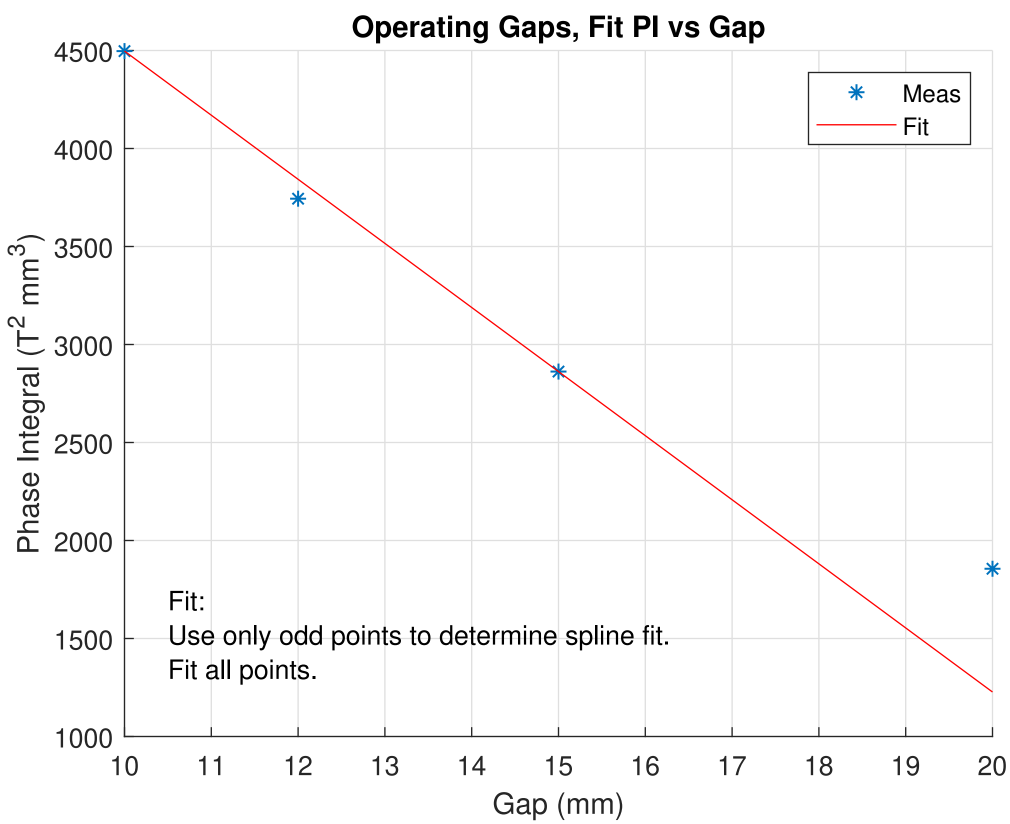
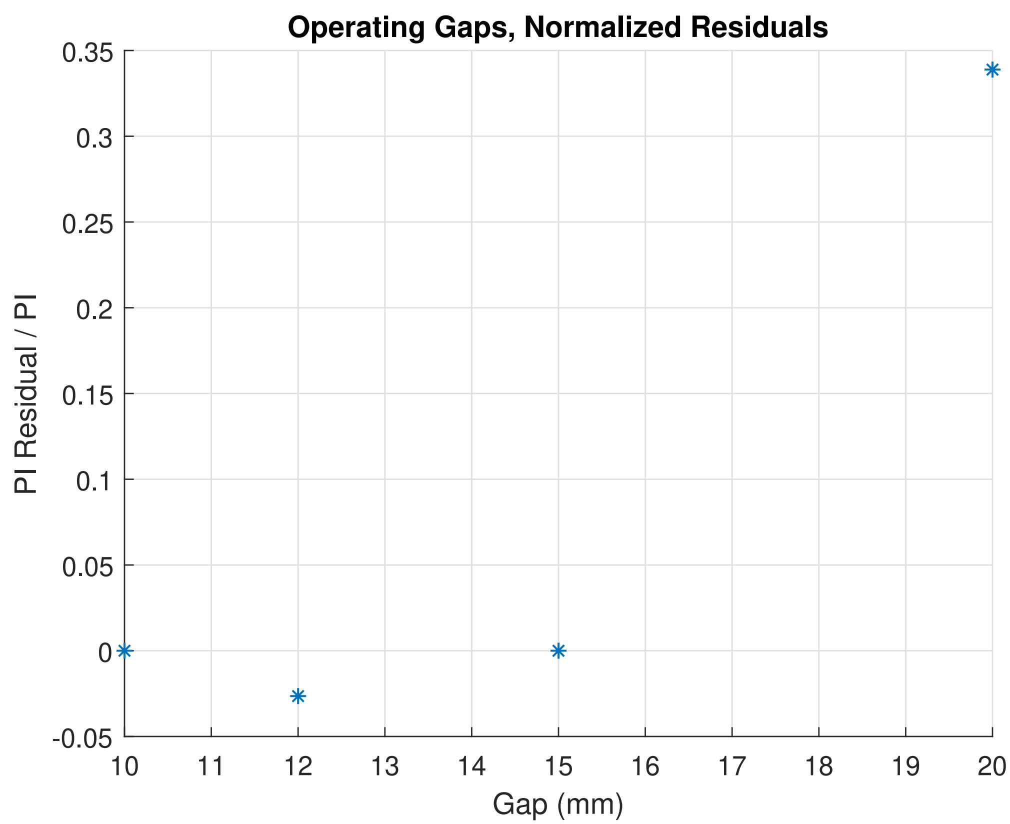
SLAC Magnetic Measurements#
Date: 10-10-2018#
Time: 19:45:20#

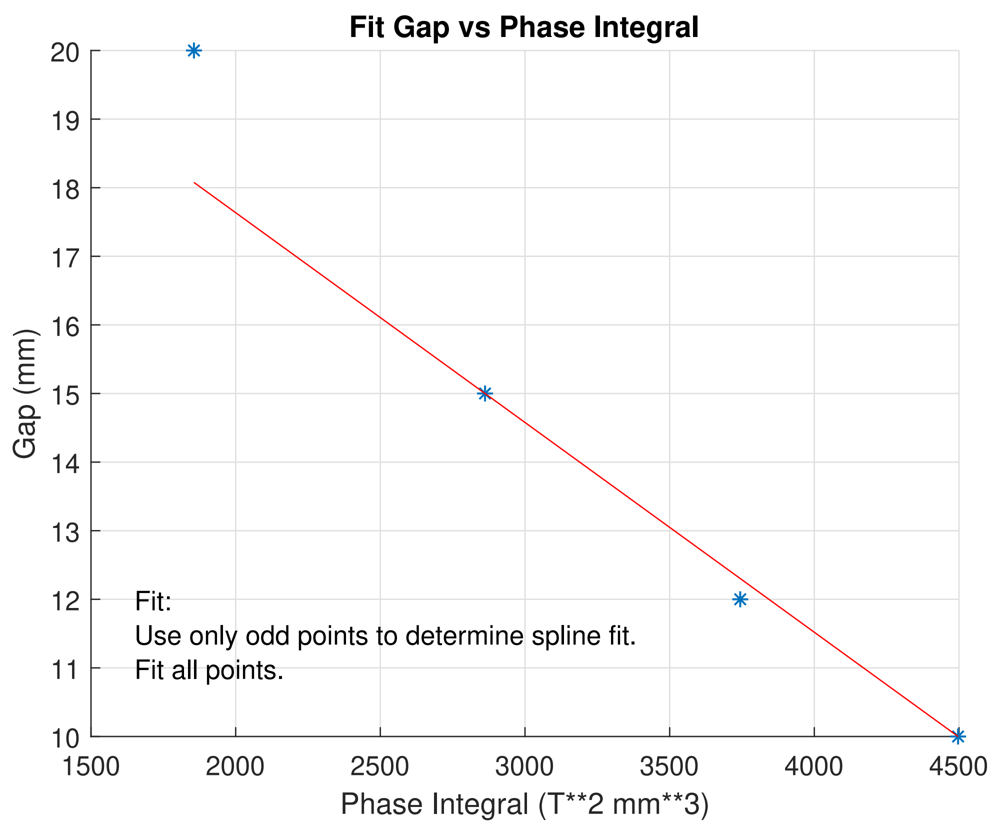

Gap vs Encoder Reading
Data
Fit
Gap = p1 * enc + p2
p1 = 1.0000e+03 (mm / count)
p2 = -1.7378e-15 (mm)
Gap = p1 * (enc + p3)
p1 = 1.0000e+03 (mm / count)
p3 = 0
Gap (mm)
Encoder
22
20
18
16
14
12
10
0.01
0.011
0.012
0.013
0.014
0.015
0.016
0.017
0.018
0.019
0.02


All Gaps, Fit PI vs Gap
Phase Integral (T^2 mm^3)
Gap (mm)
Meas
Fit
Fit:
Use only odd points to determine spline fit.
Fit all points.
4500
4000
3500
3000
2500
2000
1500
1000
10
11
12
13
14
15
16
17
18
19
20

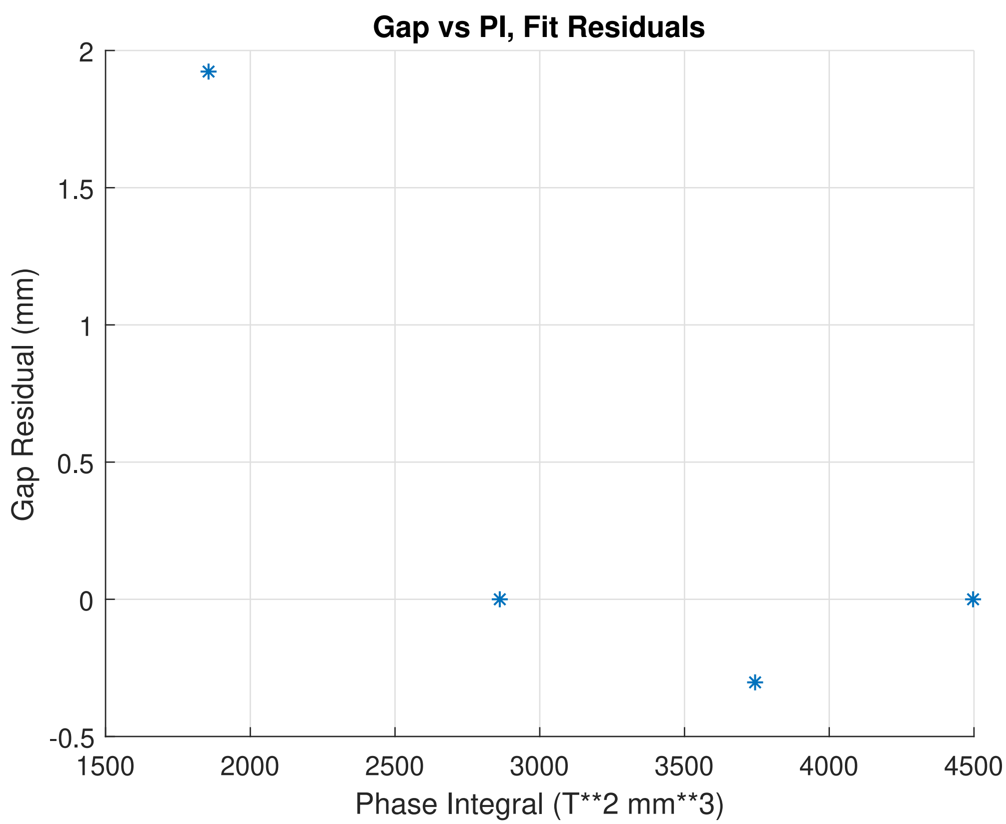

All Gaps, Normalized Residuals
PI Residual / PI
Gap (mm)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
10
11
12
13
14
15
16
17
18
19
20

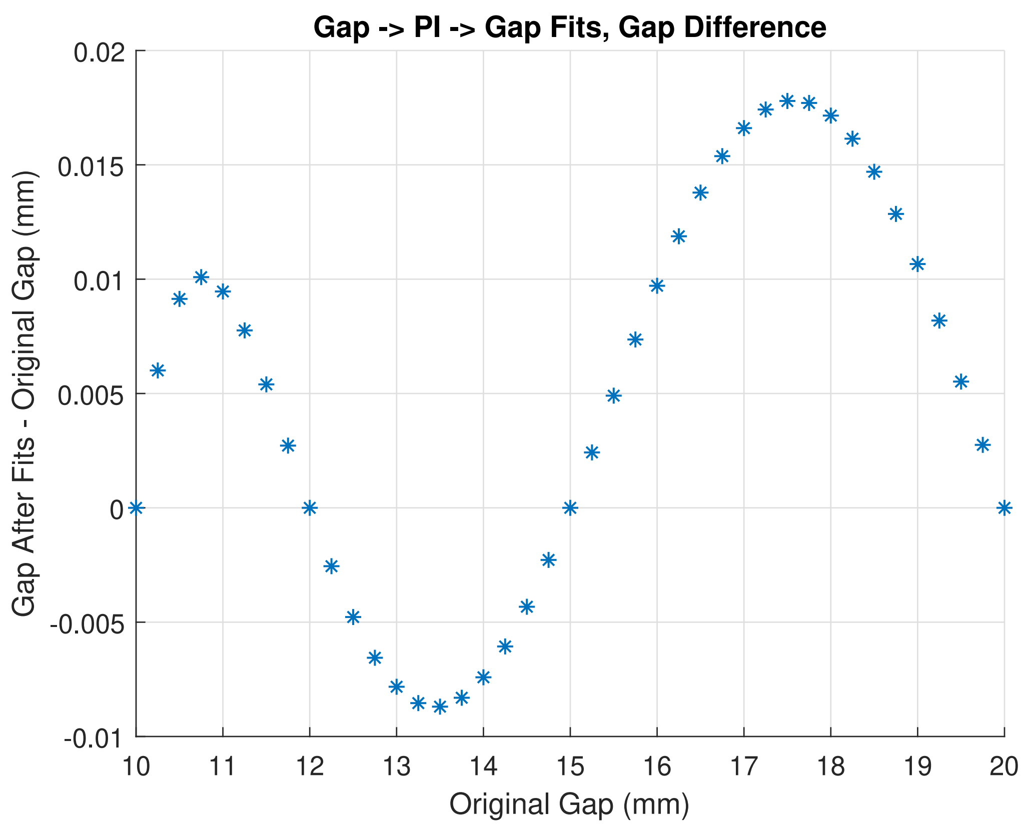

Operating Gaps, Fit PI vs Gap
Meas
Fit
Phase Integral (T2 mm3)
4500
4000
3500
3000
2500
2000
1500
1000
10
11
12
13
14
15
16
17
18
19
20
Gap (mm)
Fit:
Use only odd points to determine spline fit.
Fit all points.

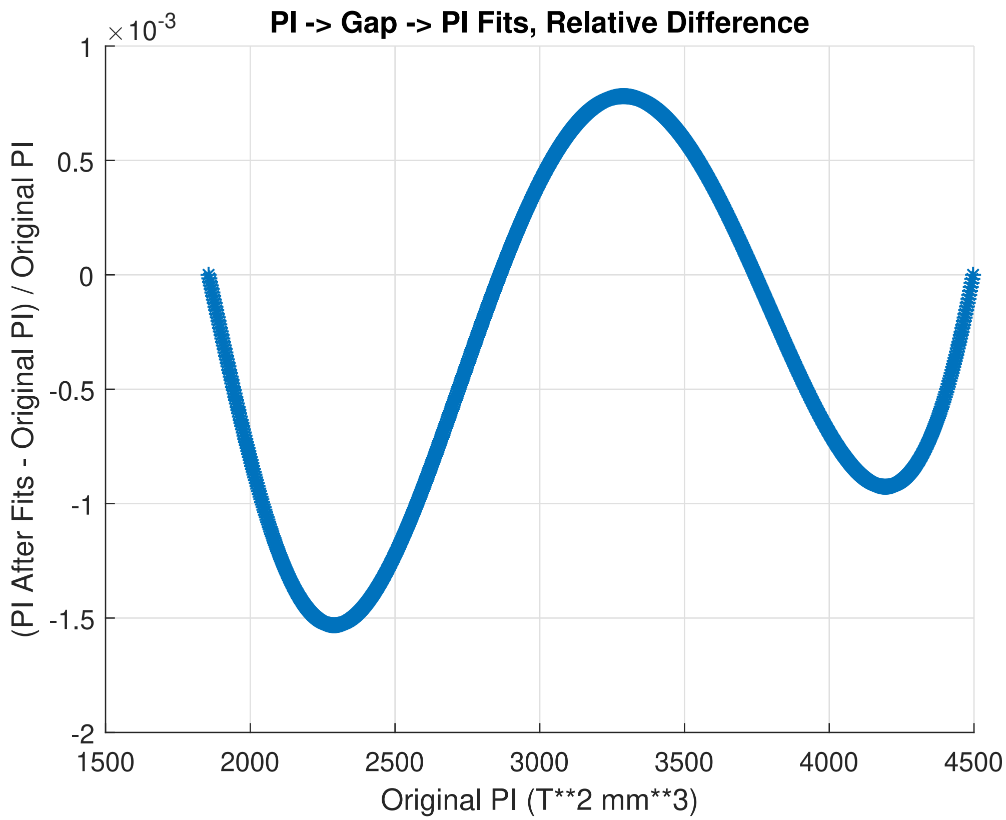

Operating Gaps, Normalized Residuals
PI Residual / PI
Gap (mm)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
-0.05
10
11
12
13
14
15
16
17
18
19
20



Fit Gap vs Phase Integral
20
19
18
17
16
15
14
13
12
11
10
Gap (mm)
1500
2000
2500
3000
3500
4000
4500
Phase Integral (T**2 mm**3)
Fit:
Use only odd points to determine spline fit.
Fit all points.


Gap vs PI, Fit Residuals
Gap Residual (mm)
2
1.5
1
0.5
0
-0.5
1500
2000
2500
3000
3500
4000
4500
Phase Integral (T**2 mm**3)


Gap -> PI -> Gap Fits, Gap Difference
Gap After Fits - Original Gap (mm)
0.02
0.015
0.01
0.005
0
-0.005
-0.01
10
11
12
13
14
15
16
17
18
19
20
Original Gap (mm)


PI -> Gap -> PI Fits, Relative Difference
×10^-3
1
0.5
0
-0.5
-1
-1.5
-2
1500
2000
2500
3000
3500
4000
4500
Original PI (T**2 mm**3)
(PI After Fits - Original PI) / Original PI