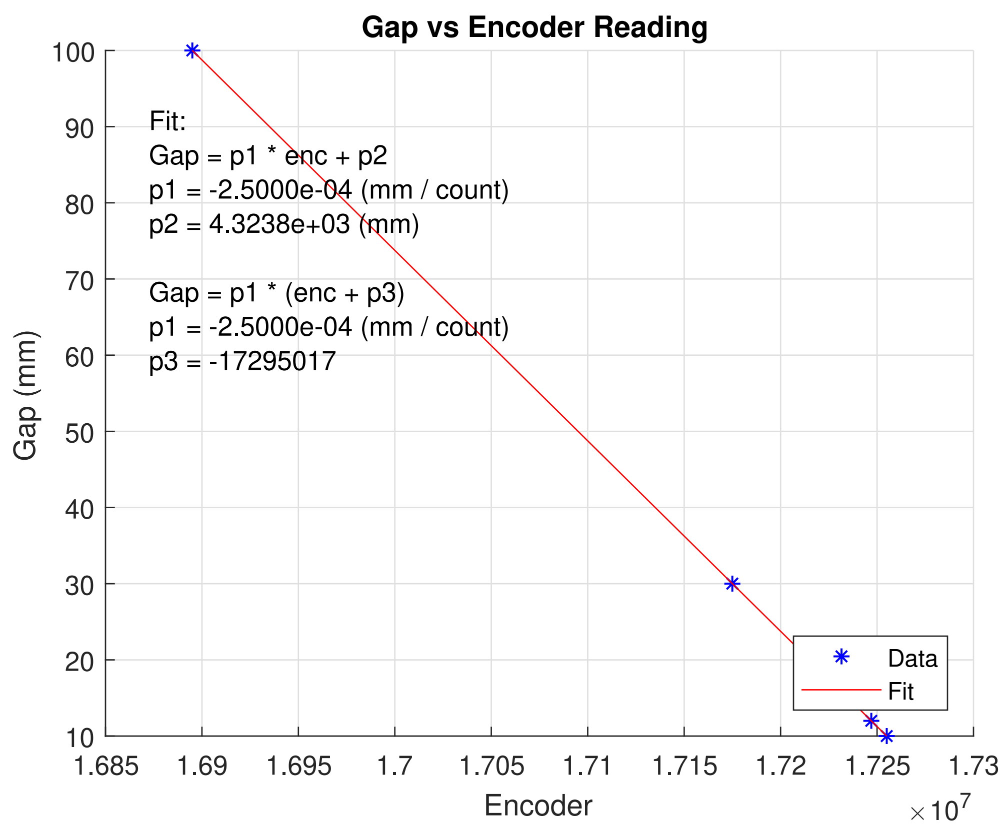
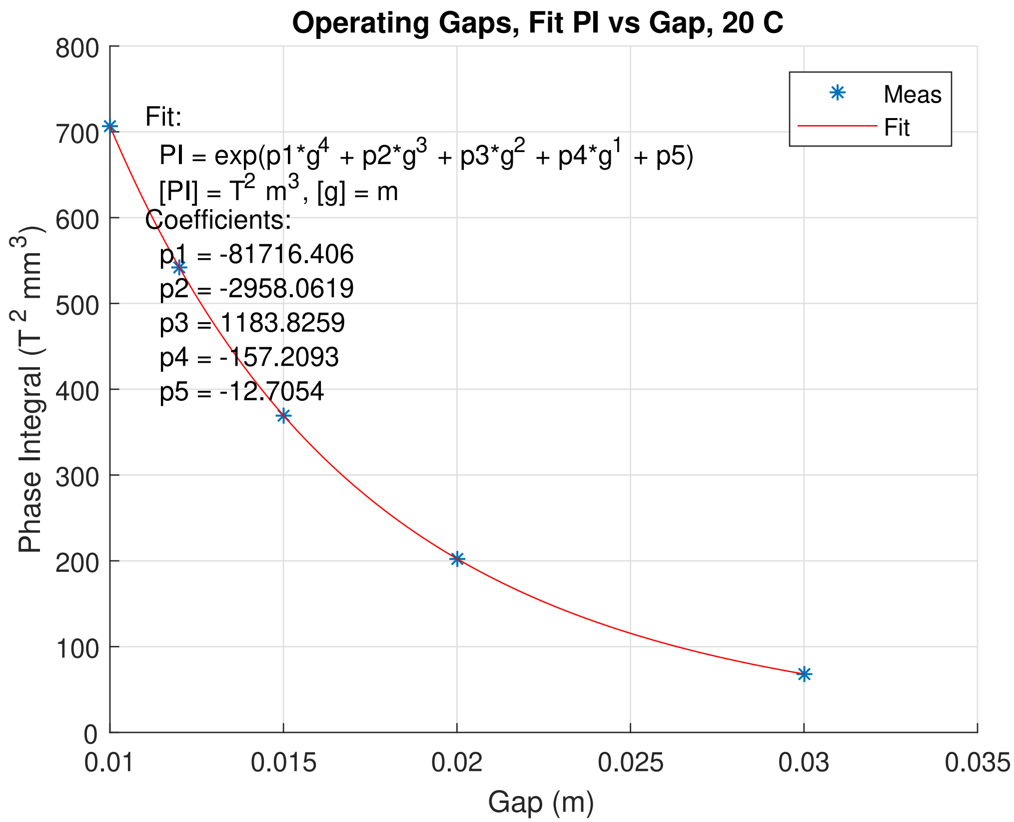
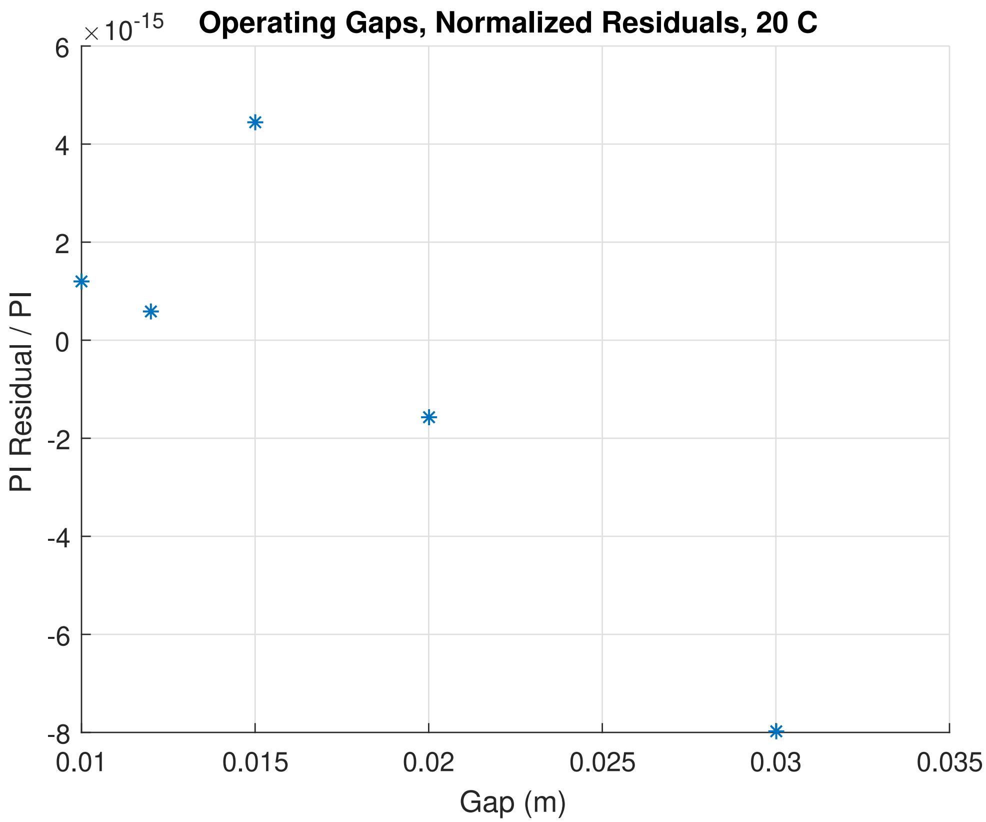
SLAC Magnetic Measurements#
Date: 08-19-2017#
Time: 11:50:45#



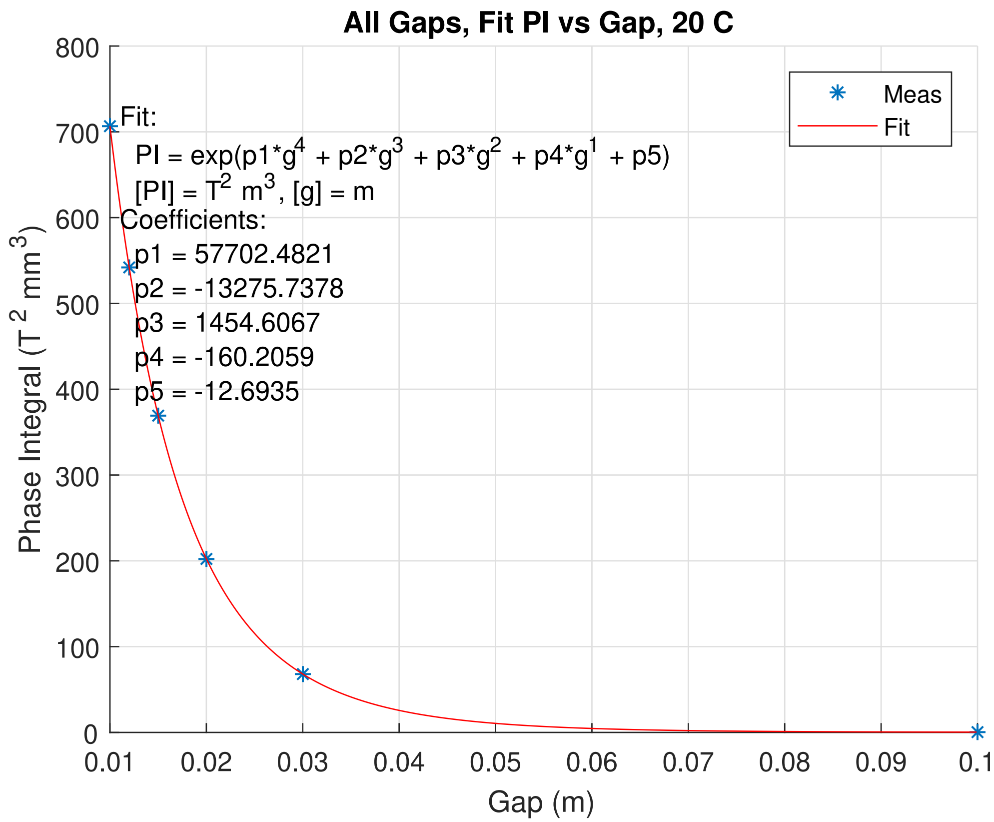
Gap vs Encoder Reading
Fit:
Gap = p1 * enc + p2
p1 = -2.5000e-04 (mm / count)
p2 = 4.3238e+03 (mm)
Gap = p1 * (enc + p3)
p1 = -2.5000e-04 (mm / count)
p3 = -17295017
Data
Fit
Gap (mm)
Encoder
×10^7
100
90
80
70
60
50
40
30
20
10
1.685
1.69
1.695
1.7
1.705
1.71
1.715
1.72
1.725
1.73



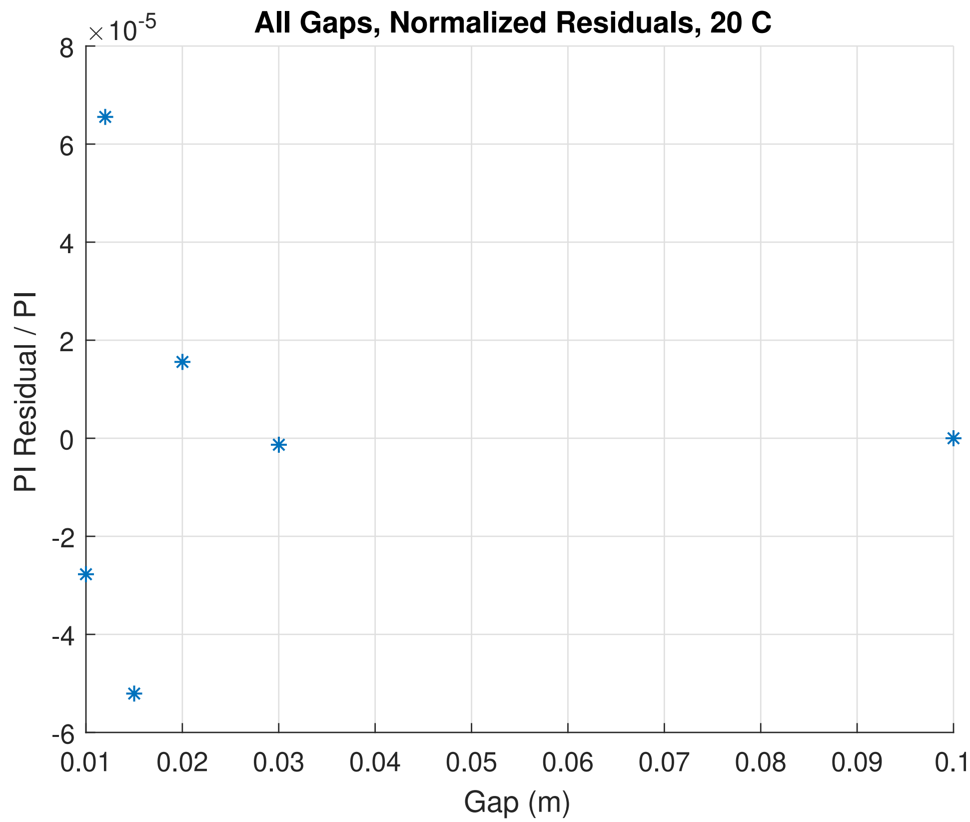
Operating Gaps, Fit PI vs Gap, 20 C
Meas
Fit
Fit:
PI = exp(p1*g^4 + p2*g^3 + p3*g^2 + p4*g^1 + p5)
[PI] = T^2 m^3, [g] = m
Coefficients:
p1 = -81716.406
p2 = -2958.0619
p3 = 1183.8259
p4 = -157.2093
p5 = -12.7054
Phase Integral (T^2 mm^3)
Gap (m)
0
100
200
300
400
500
600
700
800
0.01
0.015
0.02
0.025
0.03
0.035

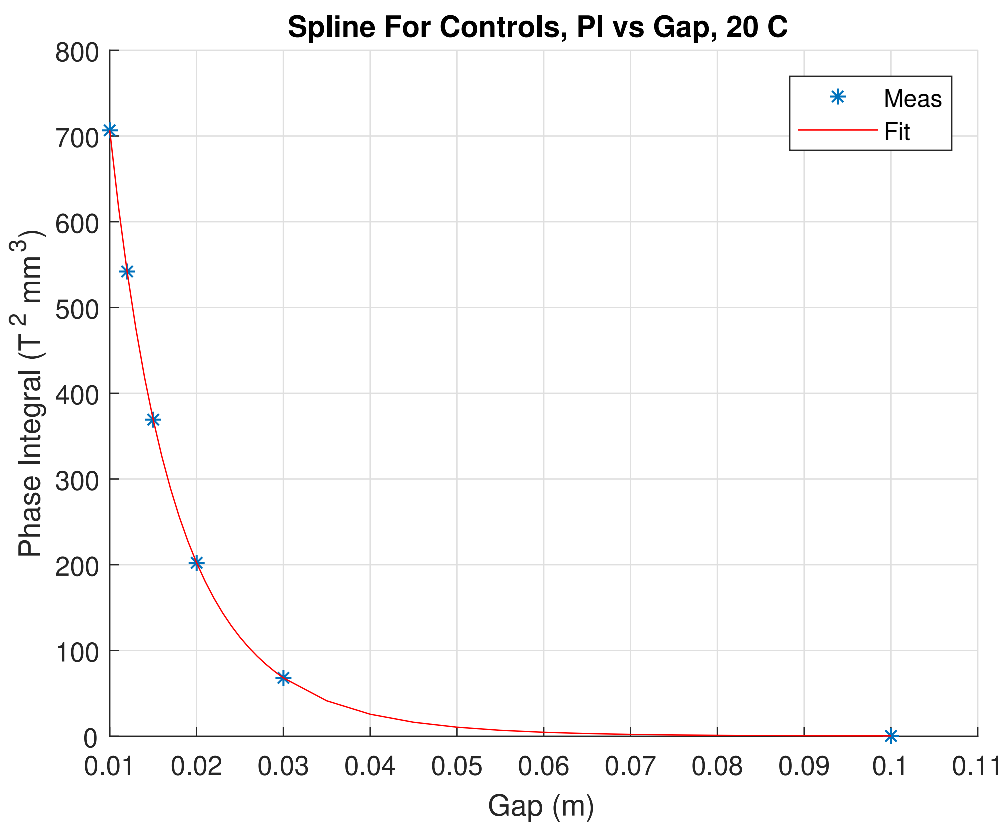


Operating Gaps, Normalized Residuals, 20 C
×10-15
6
4
2
0
-2
-4
-6
-8
PI Residual / PI
0.01
0.015
0.02
0.025
0.03
0.035
Gap (m)

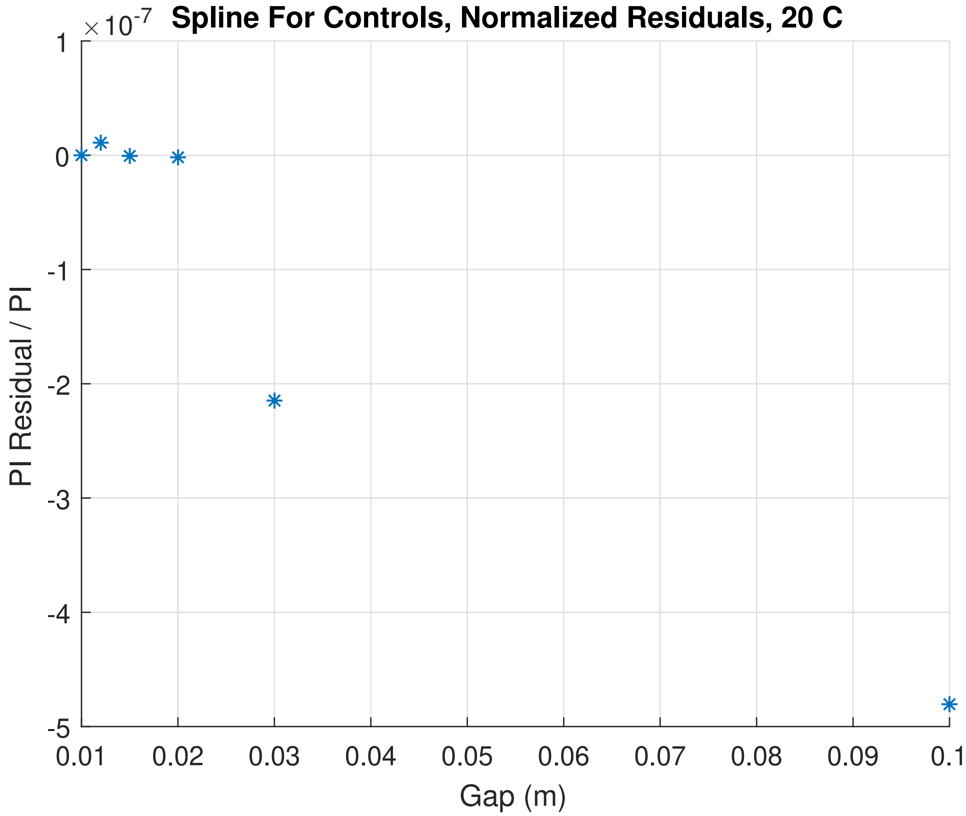


All Gaps, Fit PI vs Gap, 20 C
Meas
Fit
Fit:
PI = exp(p1*g^4 + p2*g^3 + p3*g^2 + p4*g^1 + p5)
[PI] = T^2 m^3, [g] = m
Coefficients:
p1 = 57702.4821
p2 = -13275.7378
p3 = 1454.6067
p4 = -160.2059
p5 = -12.6935
Phase Integral (T 2 mm3)
Gap (m)
0
100
200
300
400
500
600
700
800
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1


All Gaps, Normalized Residuals, 20 C
×10^-5
8
6
4
2
0
-2
-4
-6
PI Residual / PI
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Gap (m)



Spline For Controls, PI vs Gap, 20 C
Meas
Fit
Phase Integral (T 2 mm 3)
800
700
600
500
400
300
200
100
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
0.11
Gap (m)


Spline For Controls, Normalized Residuals, 20 C
×10^-7
1
0
-1
-2
-3
-4
-5
PI Residual / PI
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
Gap (m)