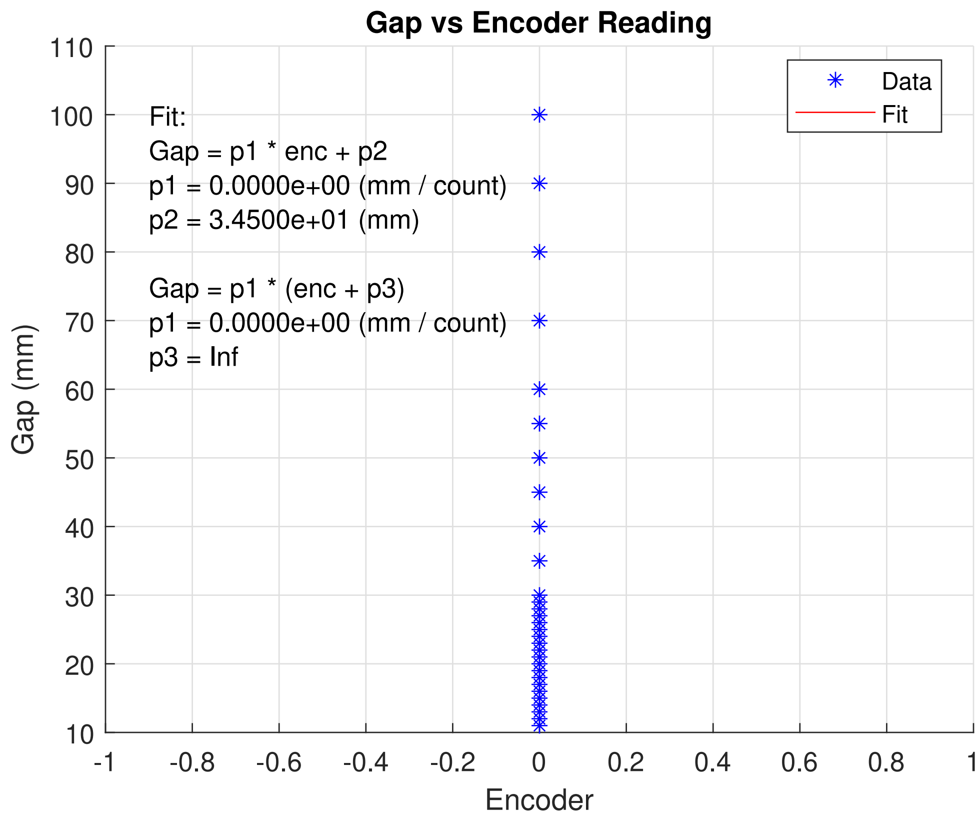
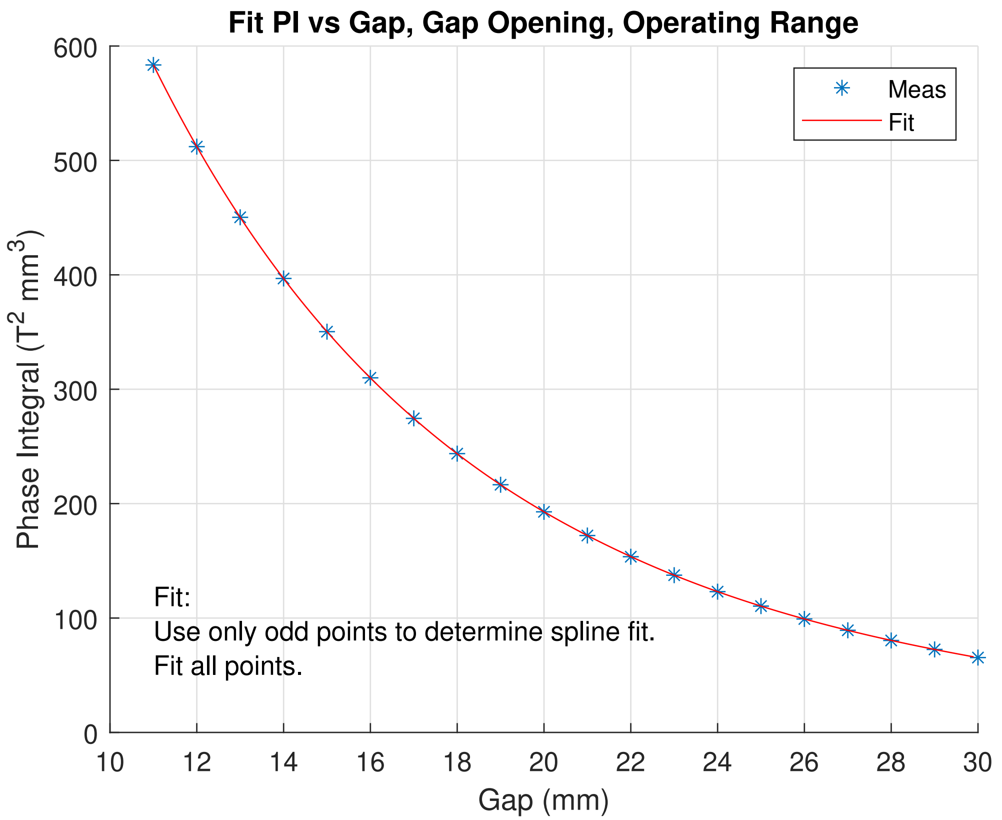
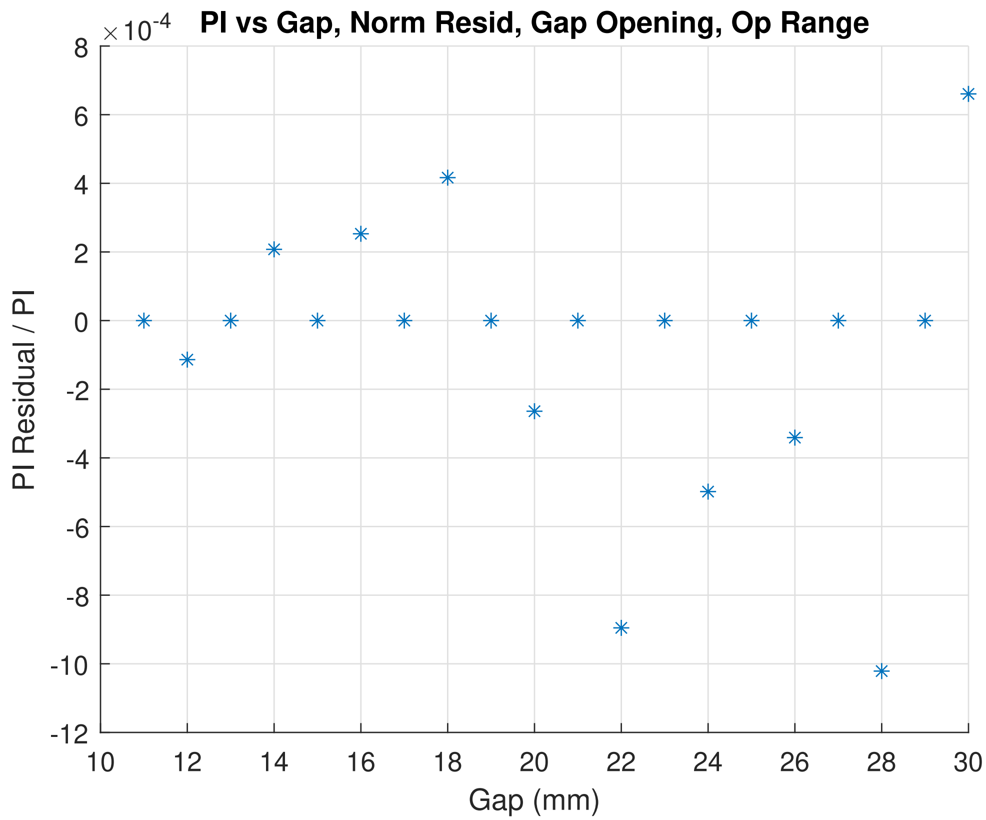
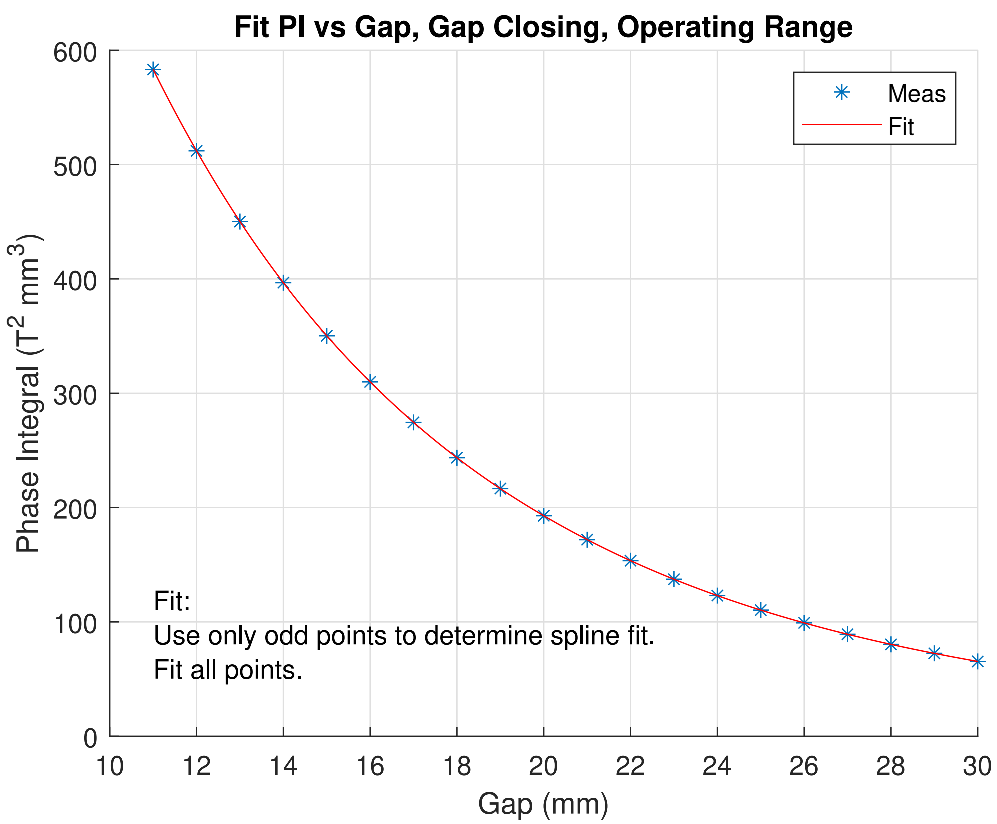
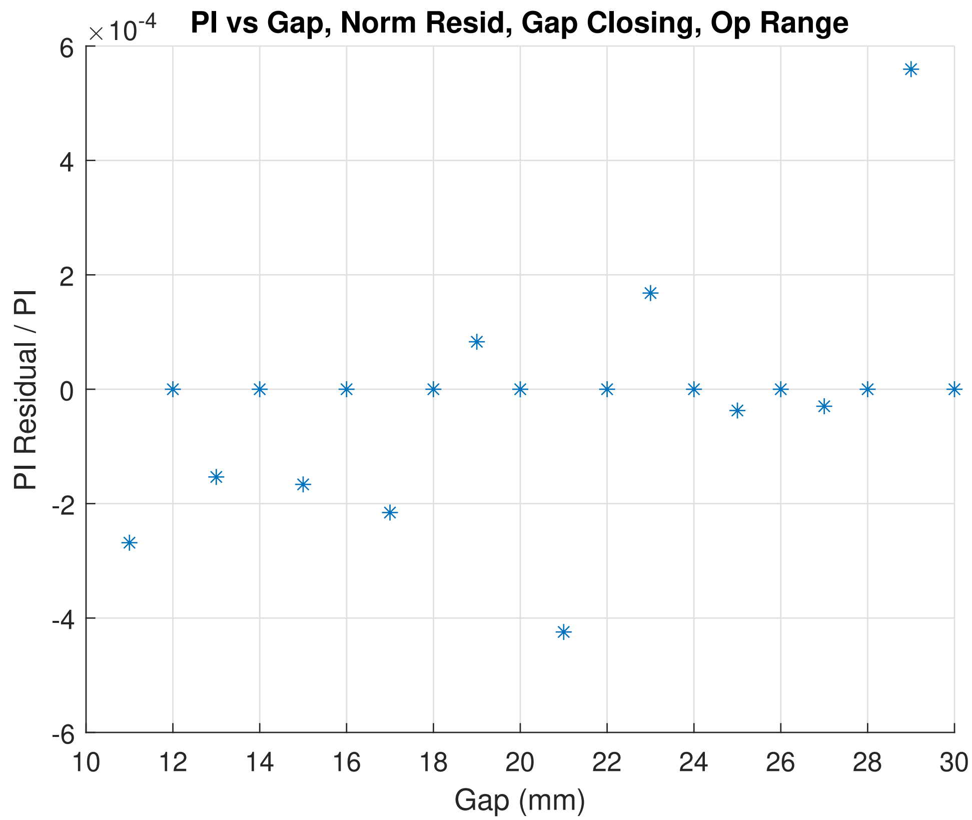
SLAC Magnetic Measurements#
Date: 08-26-2021#
Time: 11:45:55#

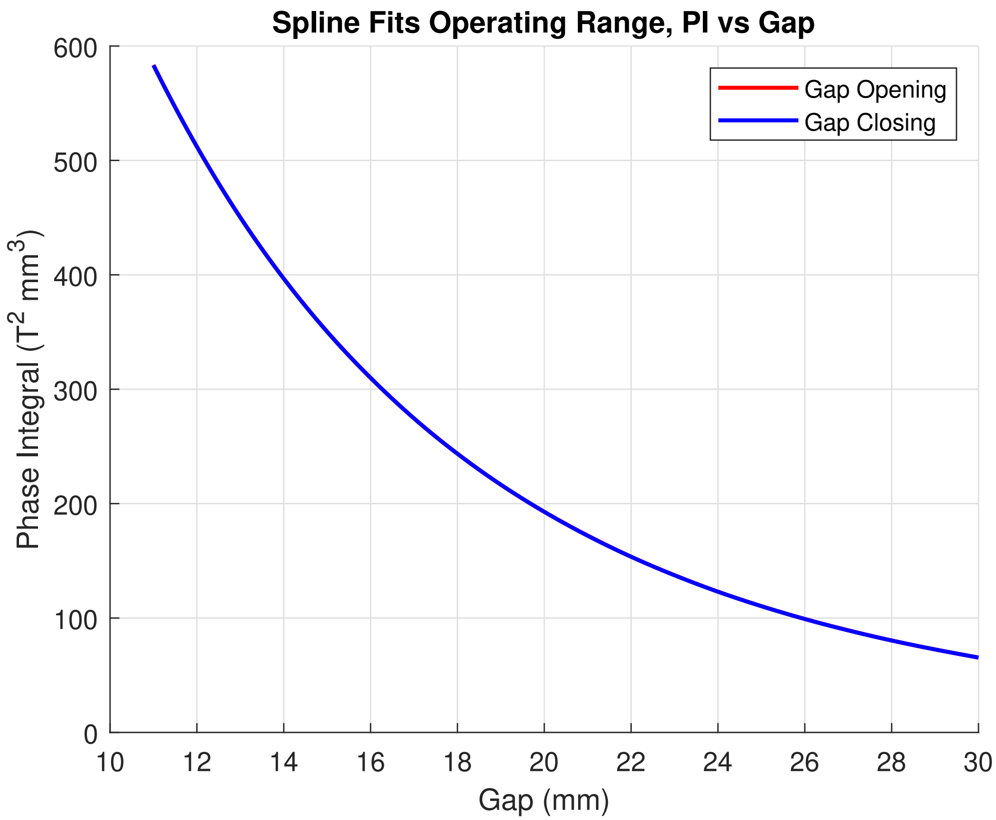

Gap vs Encoder Reading
Fit:
Gap = p1 * enc + p2
p1 = 0.0000e+00 (mm / count)
p2 = 3.4500e+01 (mm)
Gap = p1 * (enc + p3)
p1 = 0.0000e+00 (mm / count)
p3 = Inf
Data
Fit
Gap (mm)
Encoder
110
100
90
80
70
60
50
40
30
20
10
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1

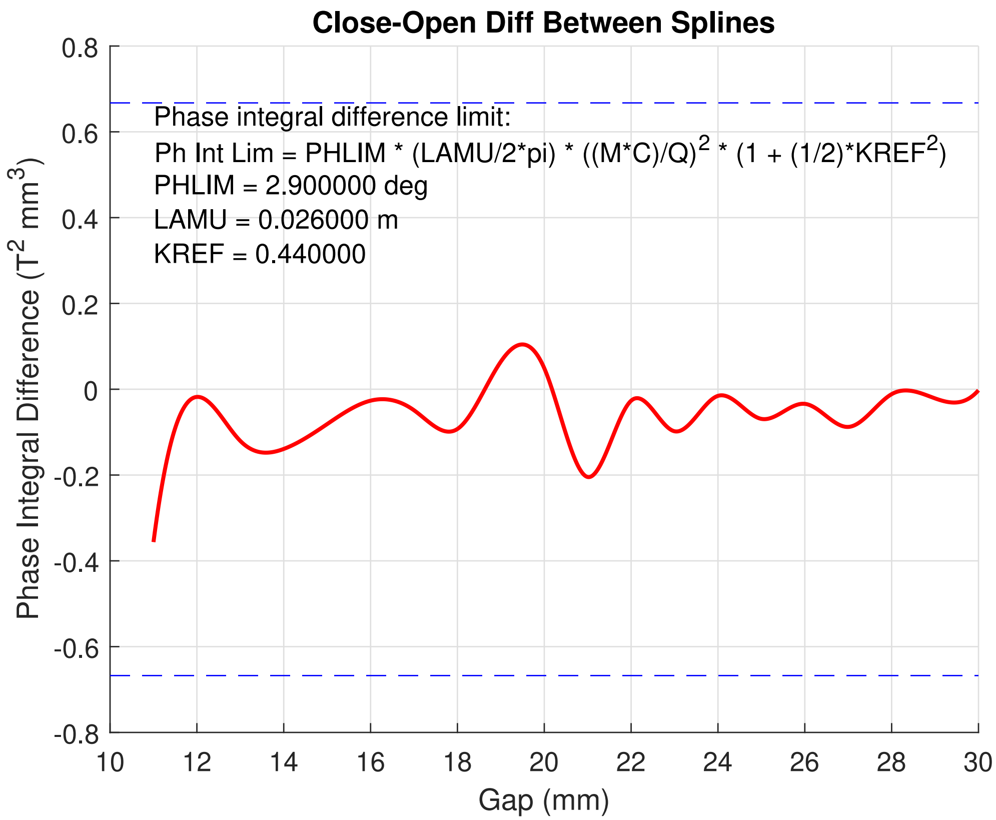

Fit PI vs Gap, Gap Opening, Operating Range
Phase Integral (T^2 mm^3)
Gap (mm)
Meas
Fit
Fit:
Use only odd points to determine spline fit.
Fit all points.
0
100
200
300
400
500
600
10
12
14
16
18
20
22
24
26
28
30


PI vs Gap, Norm Resid, Gap Opening, Op Range
×10^-4
PI Residual / PI
Gap (mm)
8
6
4
2
0
-2
-4
-6
-8
-10
-12
10
12
14
16
18
20
22
24
26
28
30

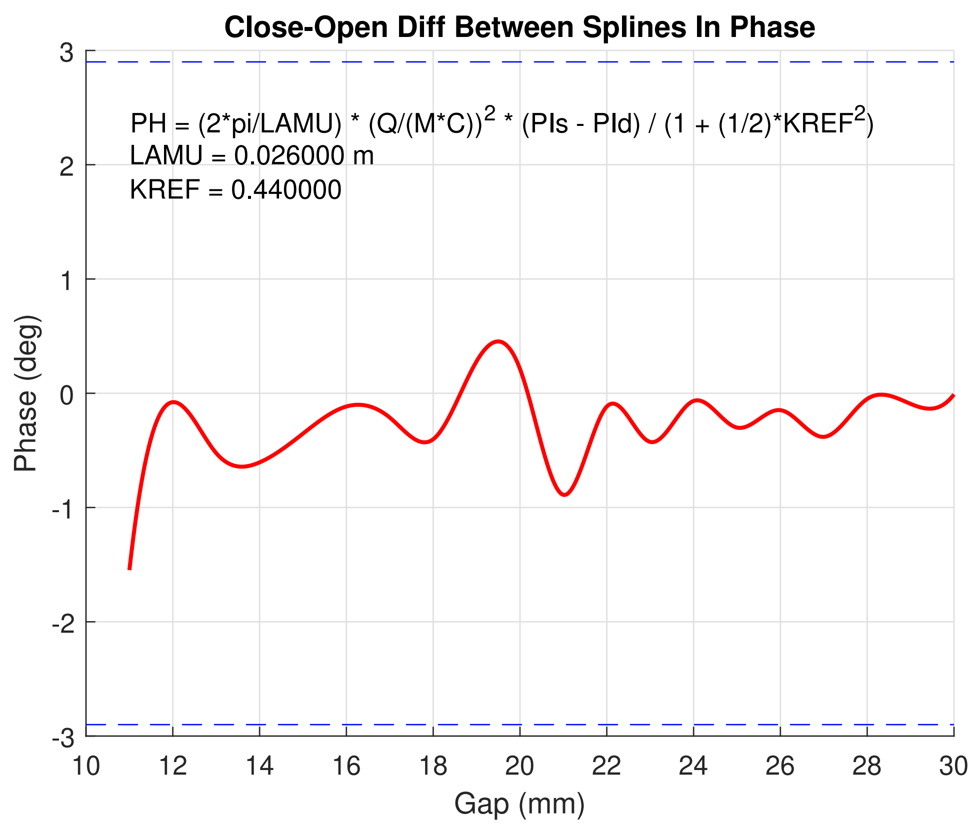

Fit PI vs Gap, Gap Closing, Operating Range
Phase Integral (T^2 mm^3)
Gap (mm)
Meas
Fit
Fit:
Use only odd points to determine spline fit.
Fit all points.
0
100
200
300
400
500
600
10
12
14
16
18
20
22
24
26
28
30


PI vs Gap, Norm Resid, Gap Closing, Op Range
×10^-4
6
4
2
0
-2
-4
-6
10
12
14
16
18
20
22
24
26
28
30
PI Residual / PI
Gap (mm)


Spline Fits Operating Range, PI vs Gap
Gap Opening
Gap Closing
Phase Integral (T^2 mm^3)
Gap (mm)
0
100
200
300
400
500
600
10
12
14
16
18
20
22
24
26
28
30



Close-Open Diff Between Splines
Phase integral difference limit:
Ph Int Lim = PHLIM * (LAMU/2*pi) * ((M*C)/Q)^2 * (1 + (1/2)*KREF^2)
PHLIM = 2.900000 deg
LAMU = 0.026000 m
KREF = 0.440000
Phase Integral Difference (T^2 mm^3)
Gap (mm)
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
10
12
14
16
18
20
22
24
26
28
30


Close-Open Diff Between Splines In Phase
PH = (2*pi/LAMU) * (Q/(M*C))^2 * (PIs - PId) / (1 + (1/2)*KREF^2)
LAMU = 0.026000 m
KREF = 0.440000
Phase (deg)
Gap (mm)
3
2
1
0
-1
-2
-3
10
12
14
16
18
20
22
24
26
28
30