Kinematics Report

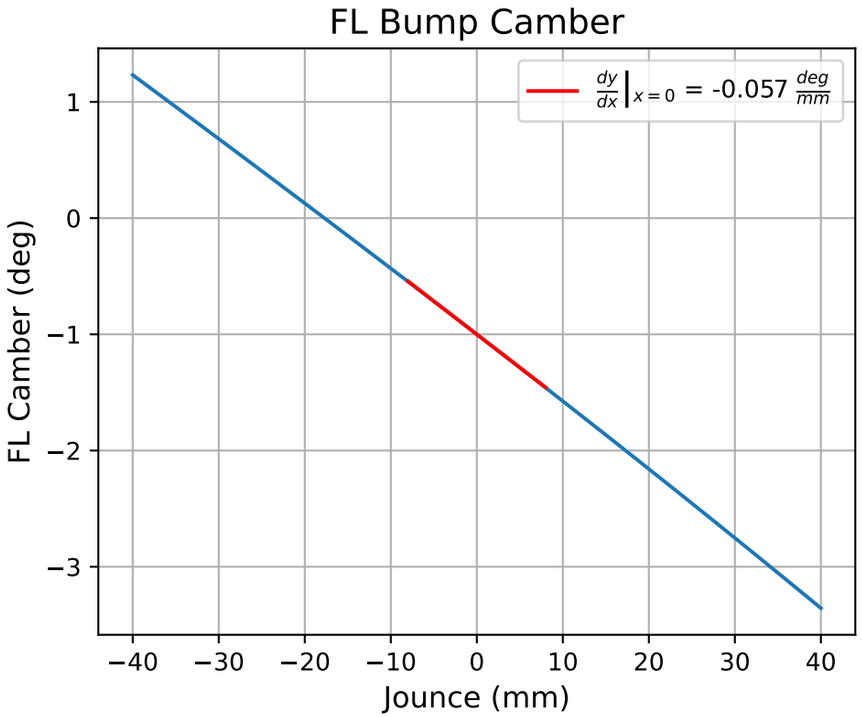
Simulation Author: Robert Horvath

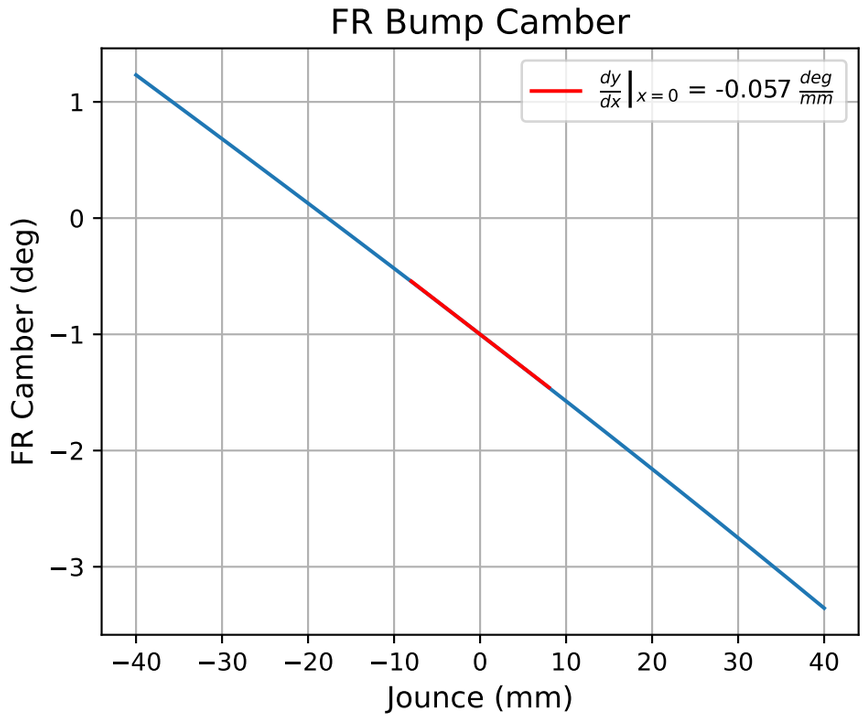
Generated By: Robert (roberthorvath5@gmail.com)

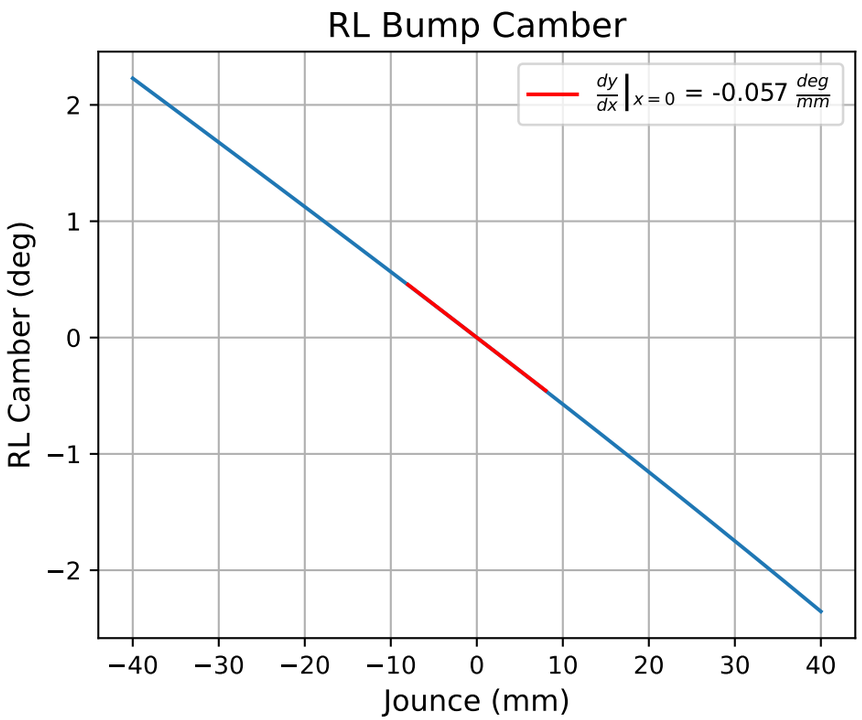
Date: 2025-06-07, 01:01 PM PDT

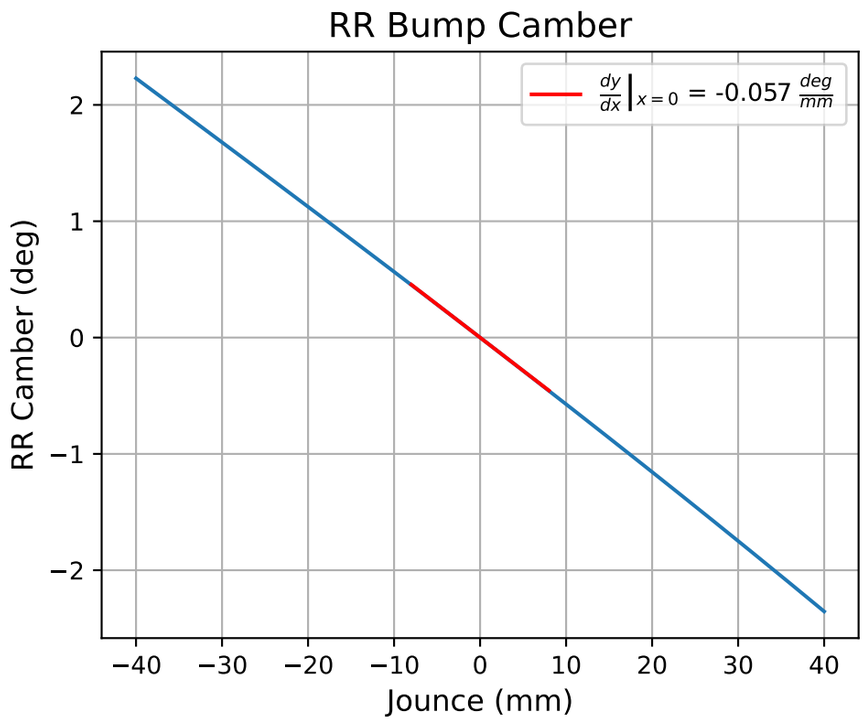
Note 1: Linear fits are tangent lines about x = 0 (NOT fits over the entire range)

Note 2: Cubic fits are performed over the entire visible domain (fits over the entire range)







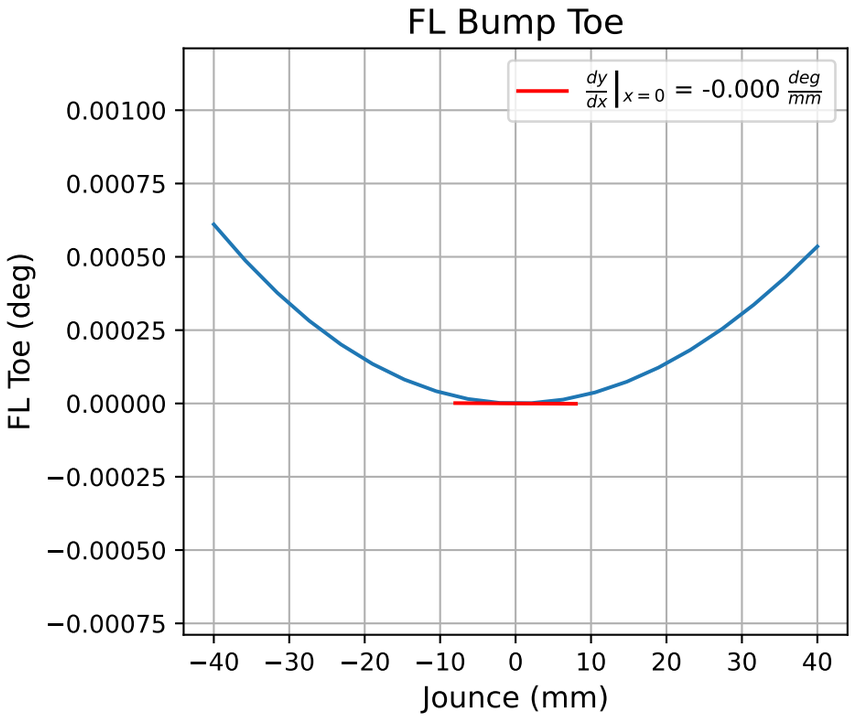


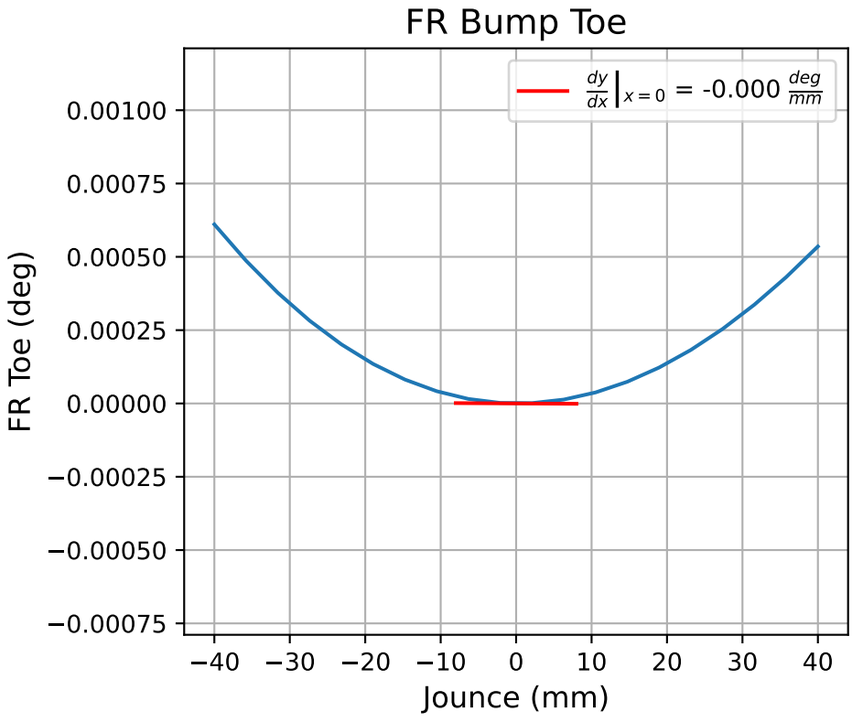
Linear Fit $f(x) = a_1x + a_0$

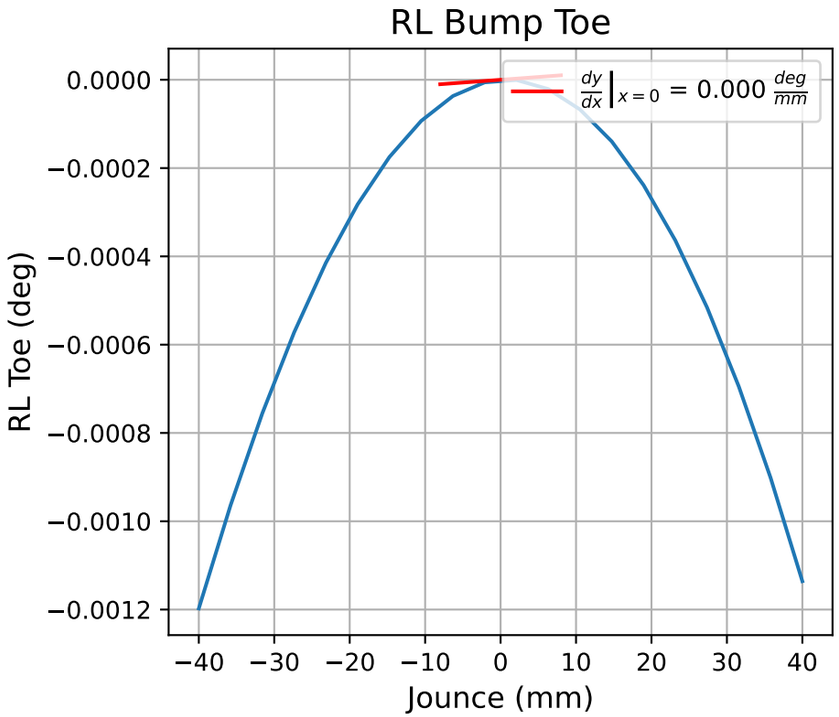
FL	$f(x) = -0.057x + -1.0$
FR	$f(x) = -0.057x + -1.0$
RL	$f(x) = -0.057x + 0.0$
RR	$f(x) = -0.057x + 0.0$

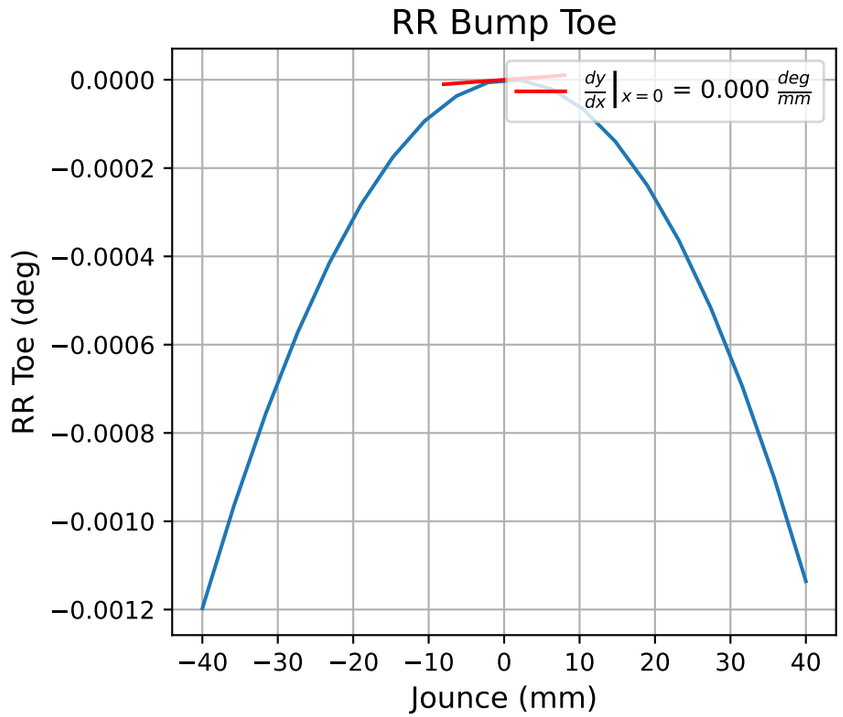
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.0x^3 + -0.0x^2 + -0.057x + -1.0$
FR	$f(x) = -0.0x^3 + -0.0x^2 + -0.057x + -1.0$
RL	$f(x) = -0.0x^3 + -0.0x^2 + -0.057x + 0.0$
RR	$f(x) = -0.0x^3 + -0.0x^2 + -0.057x + 0.0$







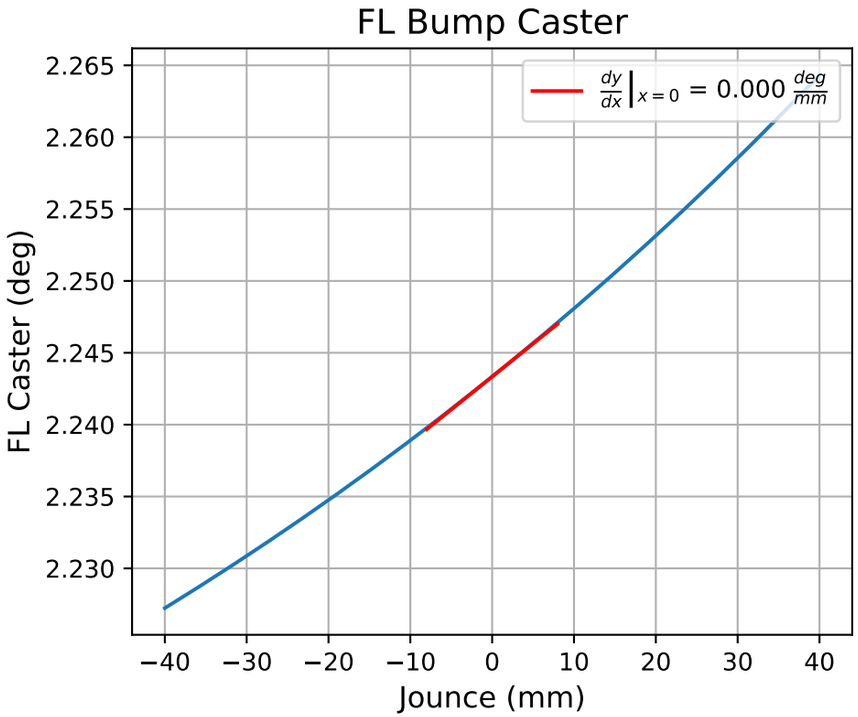


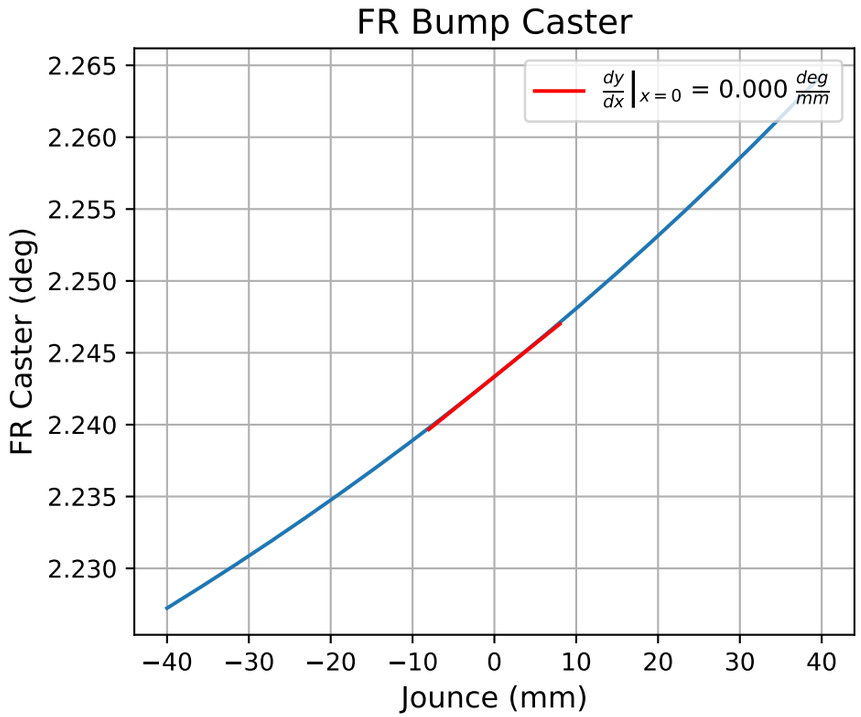
Linear Fit $f(x) = a_1x + a_0$

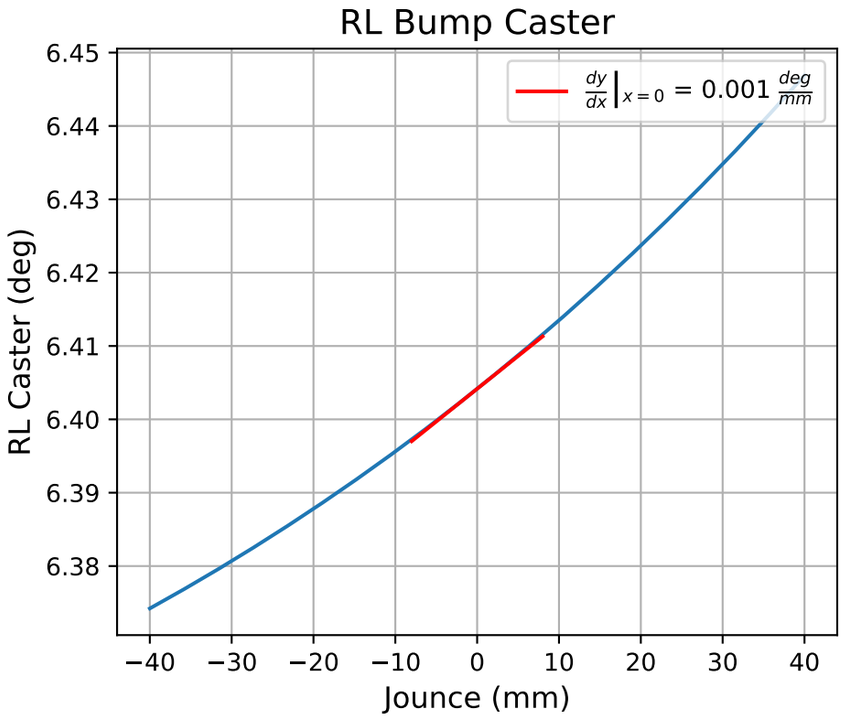
FL	$f(x) = -0.0x + -0.0$
FR	$f(x) = -0.0x + -0.0$
RL	$f(x) = 0.0x + 0.0$
RR	$f(x) = 0.0x + 0.0$

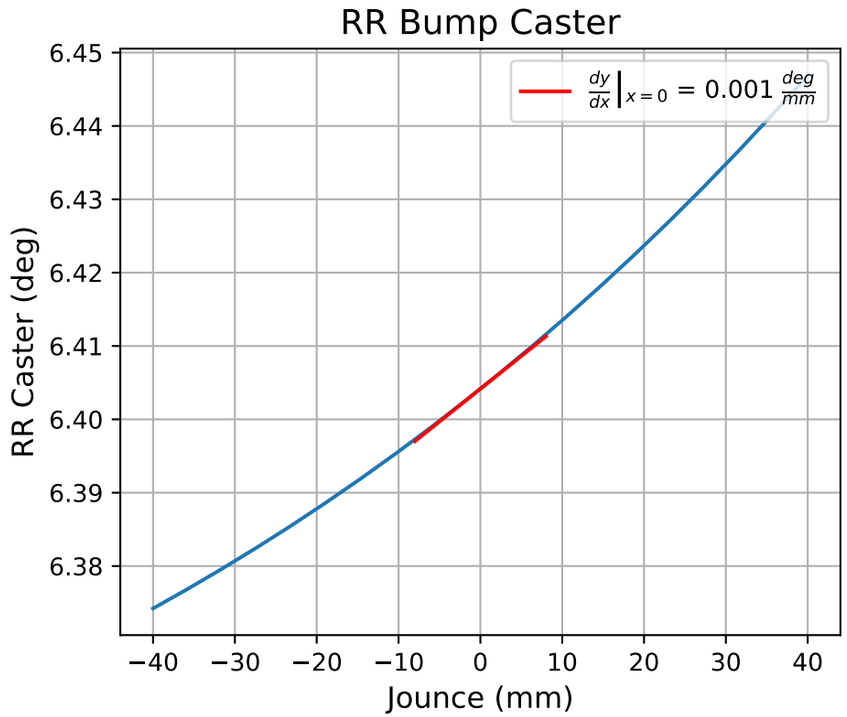
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.0x^3 + 0.0x^2 + -0.0x + -0.0$
FR	$f(x) = -0.0x^3 + 0.0x^2 + -0.0x + -0.0$
RL	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 0.0$
RR	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 0.0$







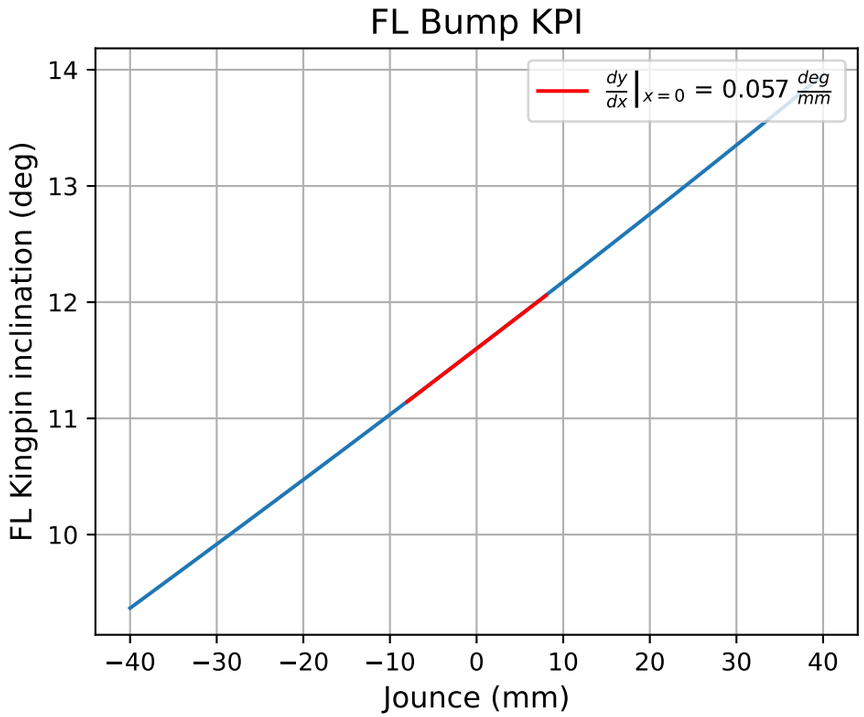


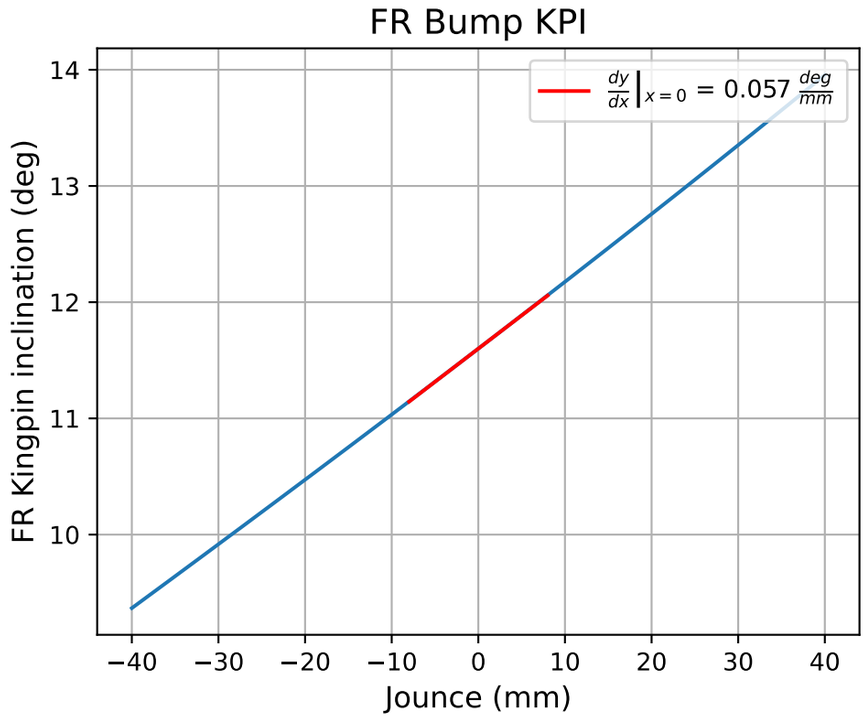
Linear Fit $f(x) = a_1x + a_0$

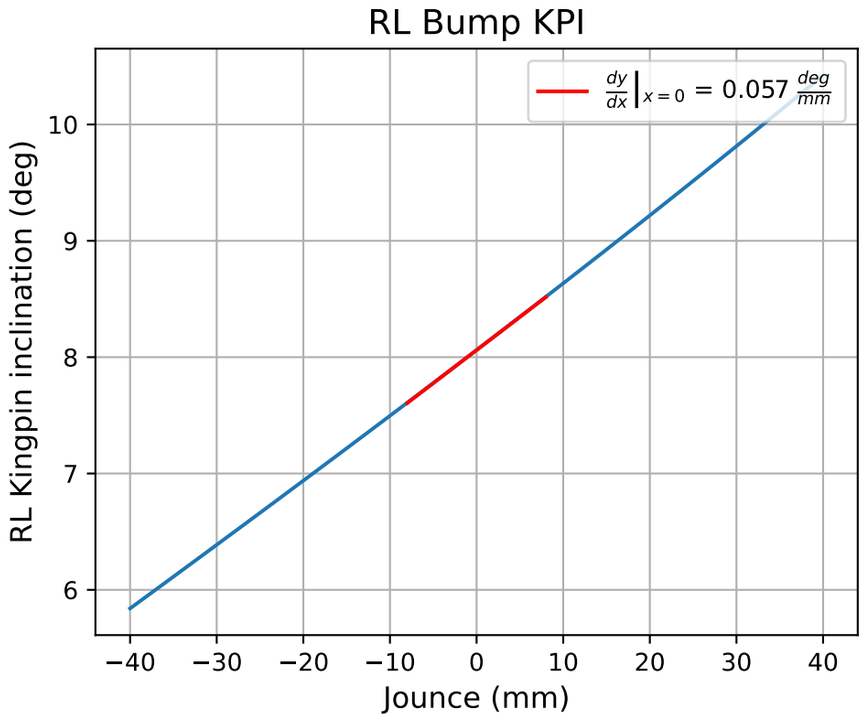
FL	$f(x) = 0.0x + 2.243$
FR	$f(x) = 0.0x + 2.243$
RL	$f(x) = 0.001x + 6.404$
RR	$f(x) = 0.001x + 6.404$

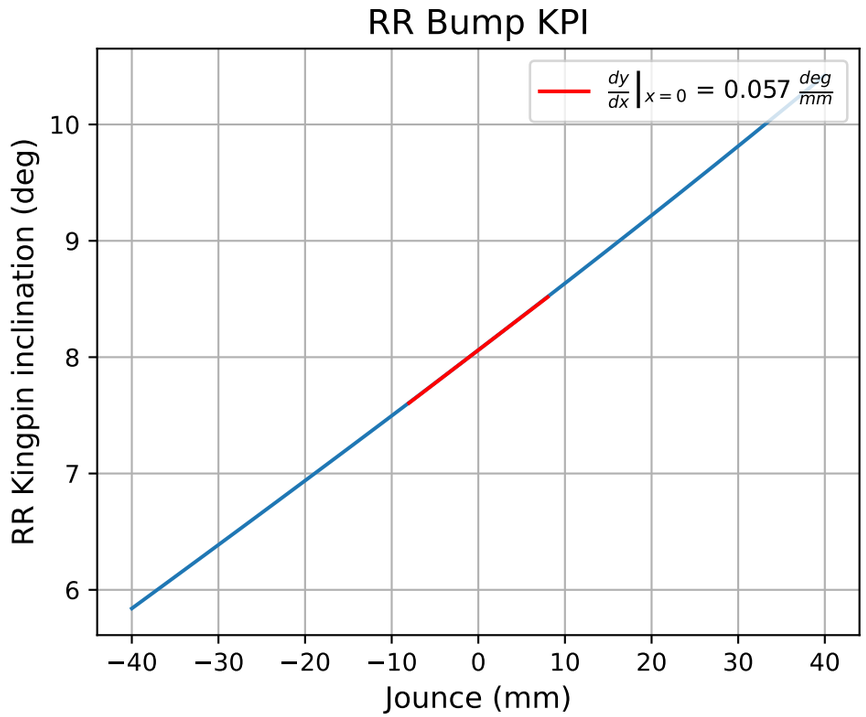
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.0x^2 + 0.0x + 2.243$
FR	$f(x) = 0.0x^3 + 0.0x^2 + 0.0x + 2.243$
RL	$f(x) = 0.0x^3 + 0.0x^2 + 0.001x + 6.404$
RR	$f(x) = 0.0x^3 + 0.0x^2 + 0.001x + 6.404$







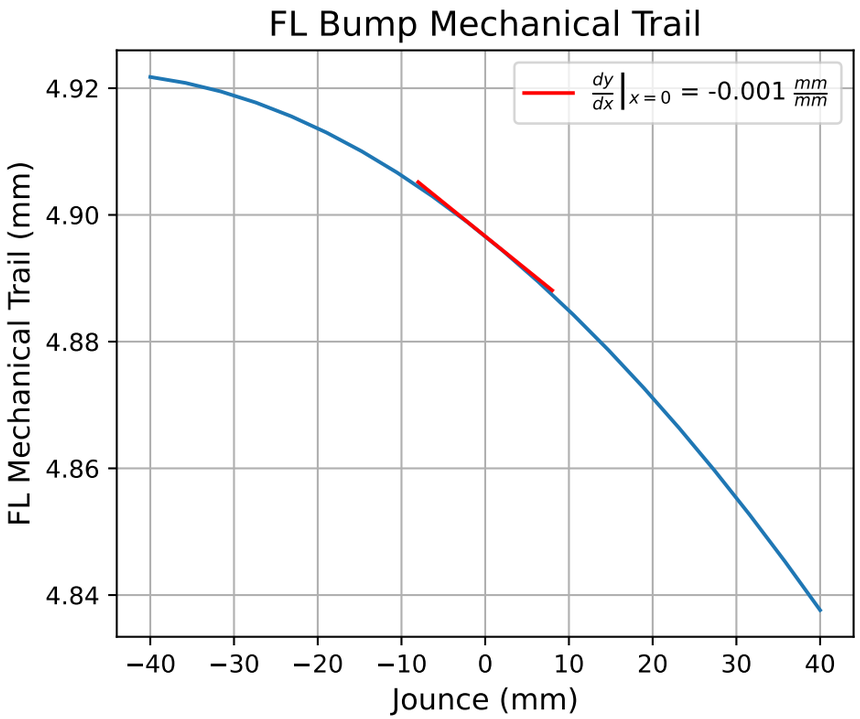


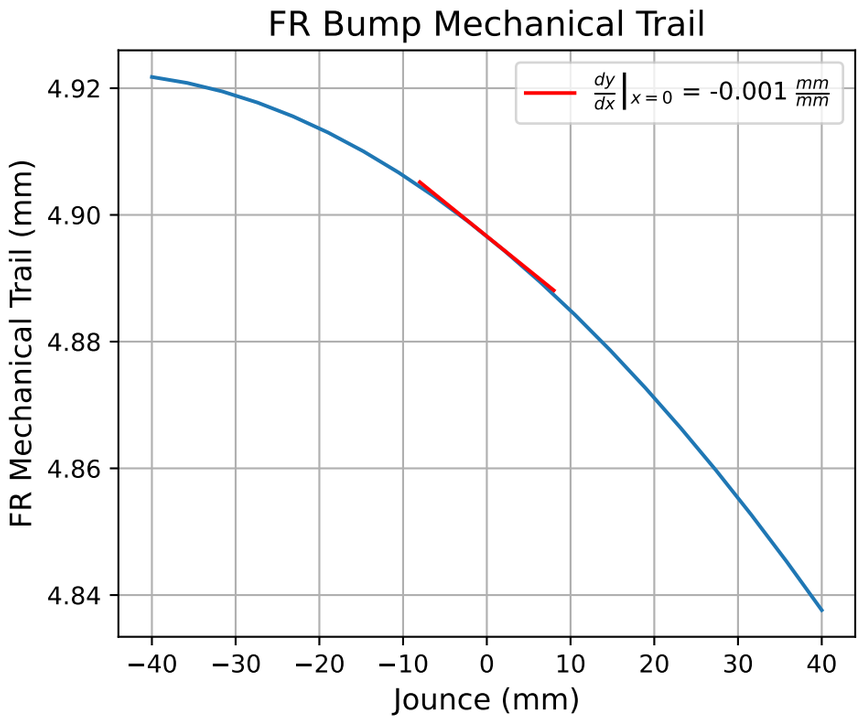
Linear Fit $f(x) = a_1x + a_0$

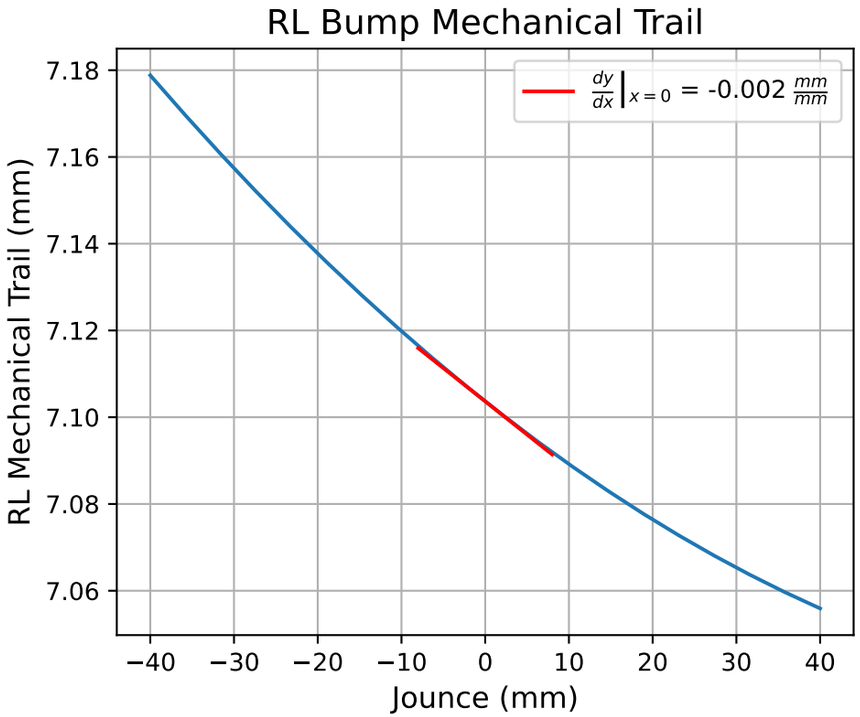
FL	$f(x) = 0.057x + 11.6$
FR	$f(x) = 0.057x + 11.6$
RL	$f(x) = 0.057x + 8.061$
RR	$f(x) = 0.057x + 8.061$

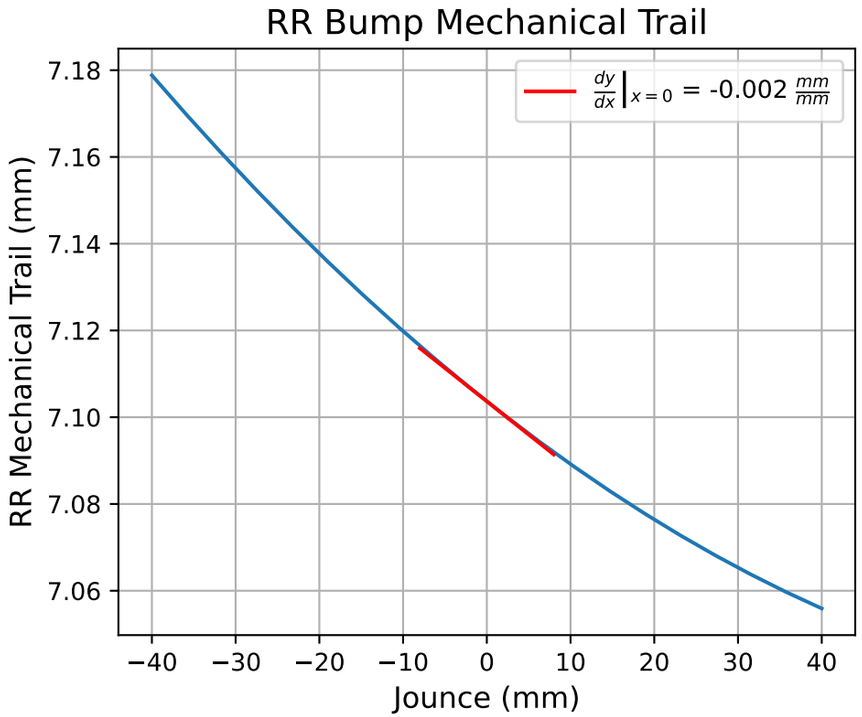
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 11.6$
FR	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 11.6$
RL	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 8.061$
RR	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 8.061$







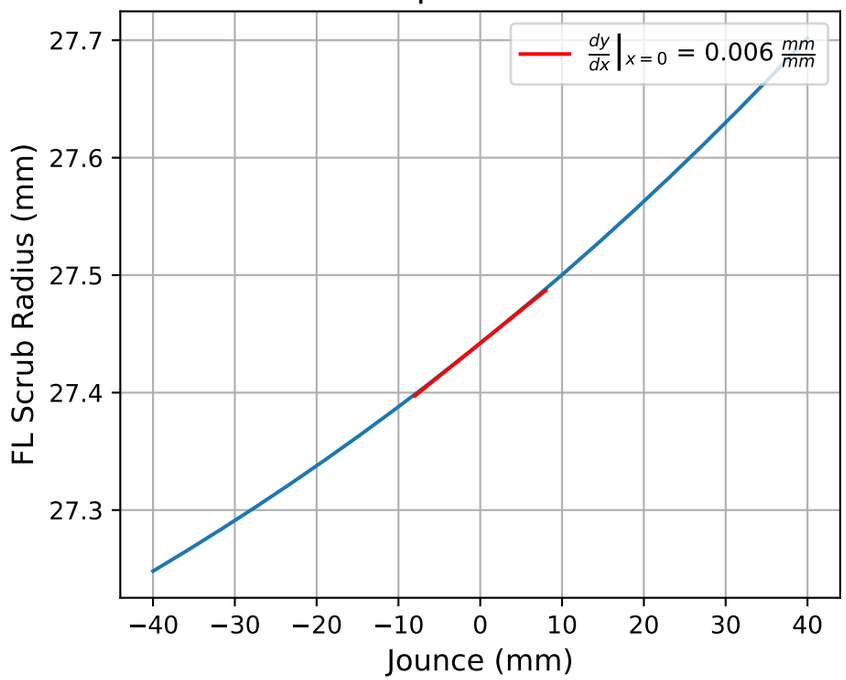


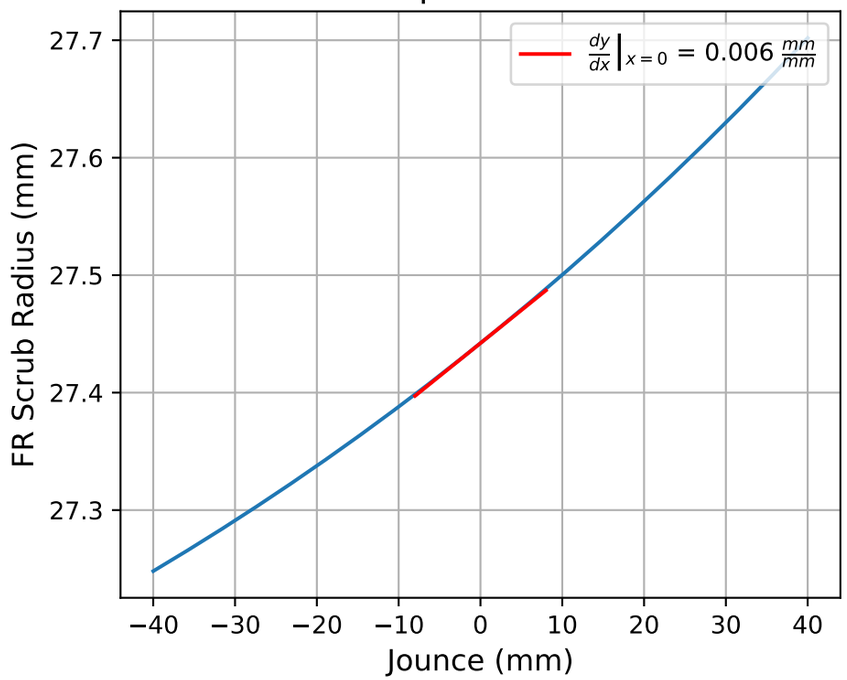
Linear Fit $f(x) = a_1x + a_0$

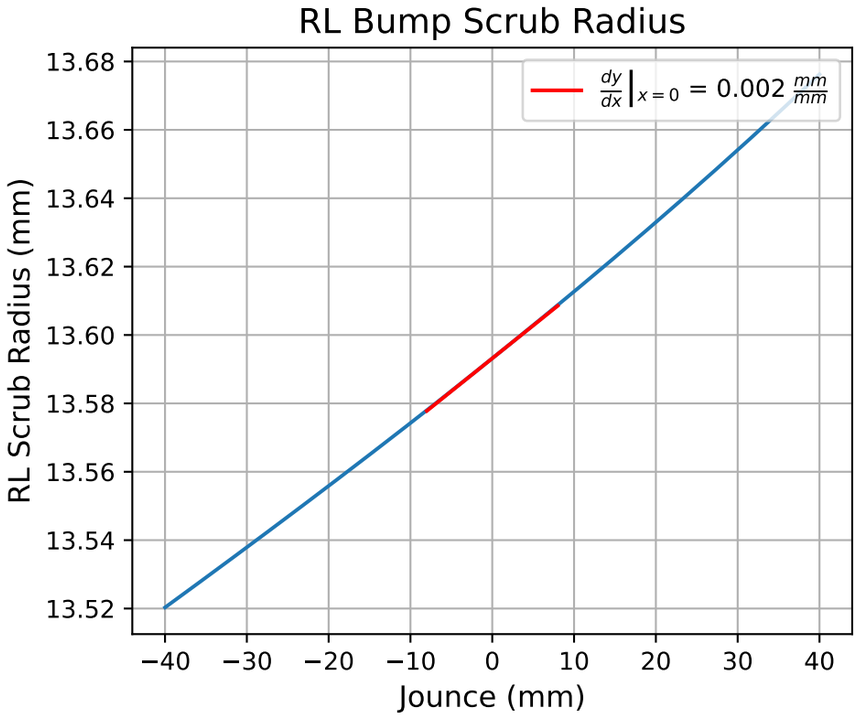
FL	$f(x) = -0.001x + 4.897$
FR	$f(x) = -0.001x + 4.897$
RL	$f(x) = -0.002x + 7.104$
RR	$f(x) = -0.002x + 7.104$

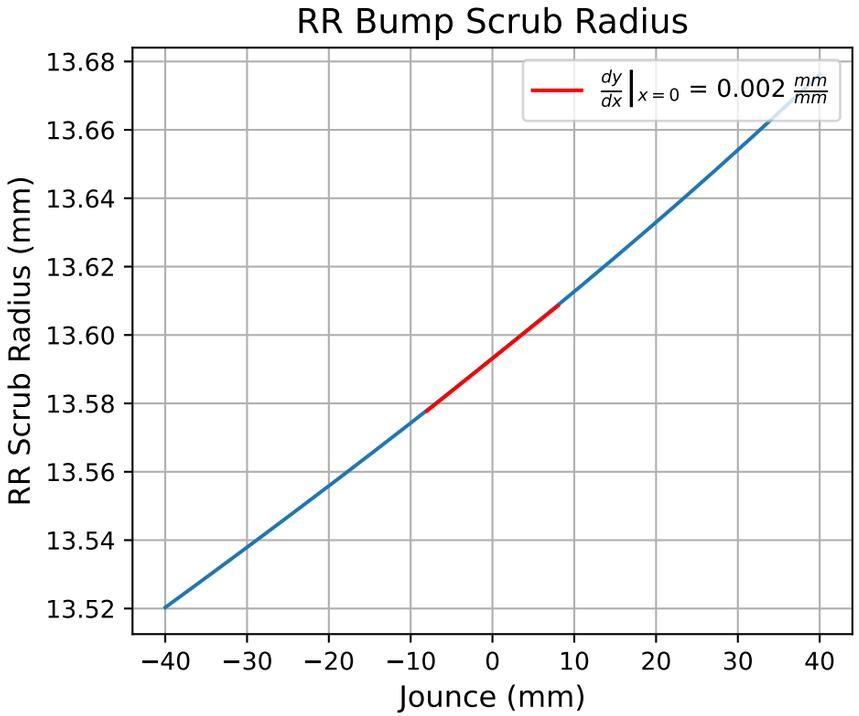
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + -0.0x^2 + -0.001x + 4.897$
FR	$f(x) = 0.0x^3 + -0.0x^2 + -0.001x + 4.897$
RL	$f(x) = -0.0x^3 + 0.0x^2 + -0.002x + 7.104$
RR	$f(x) = -0.0x^3 + 0.0x^2 + -0.002x + 7.104$







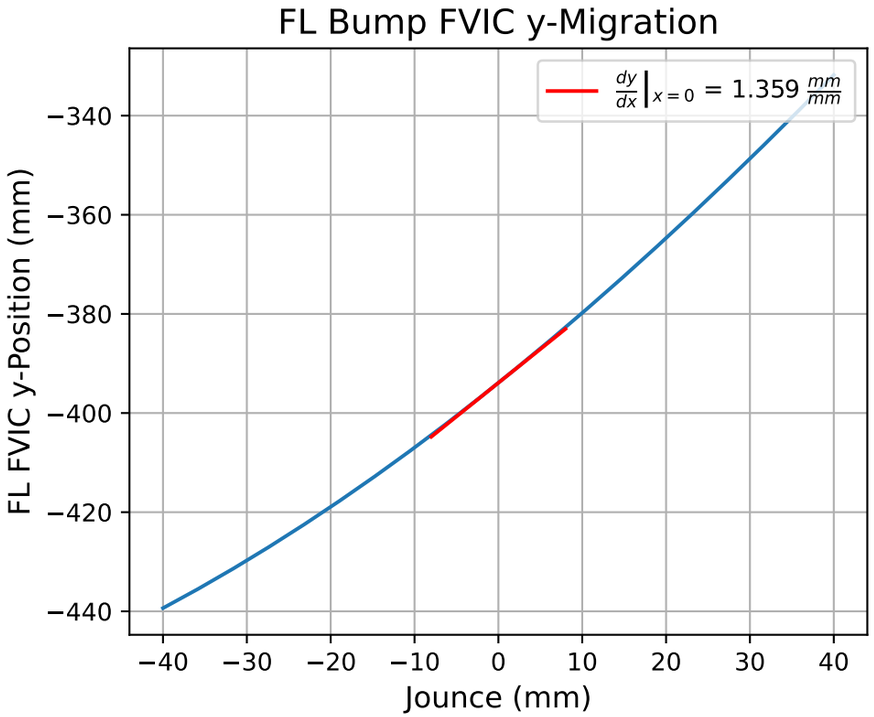


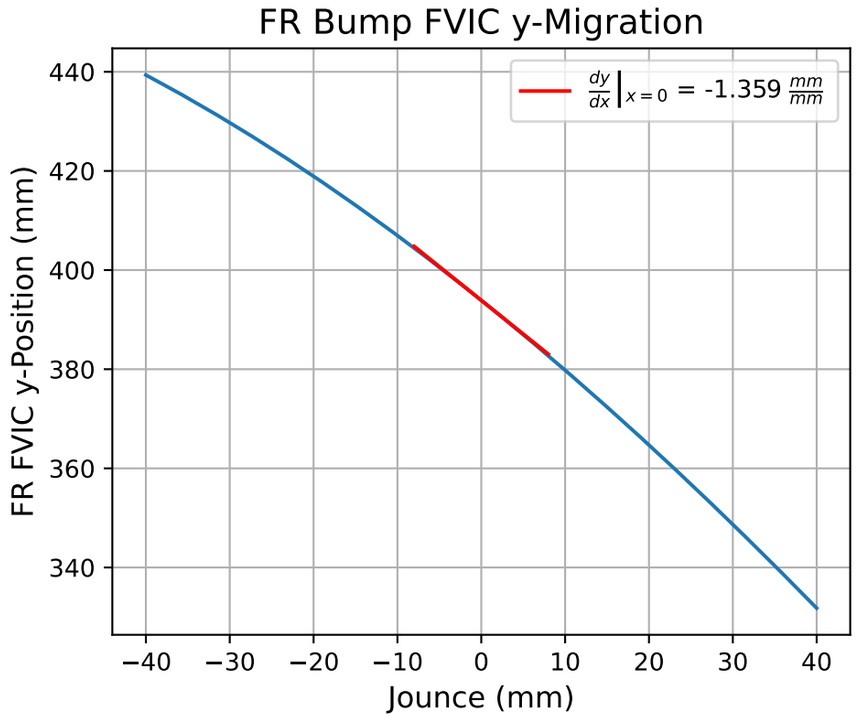
Linear Fit $f(x) = a_1x + a_0$

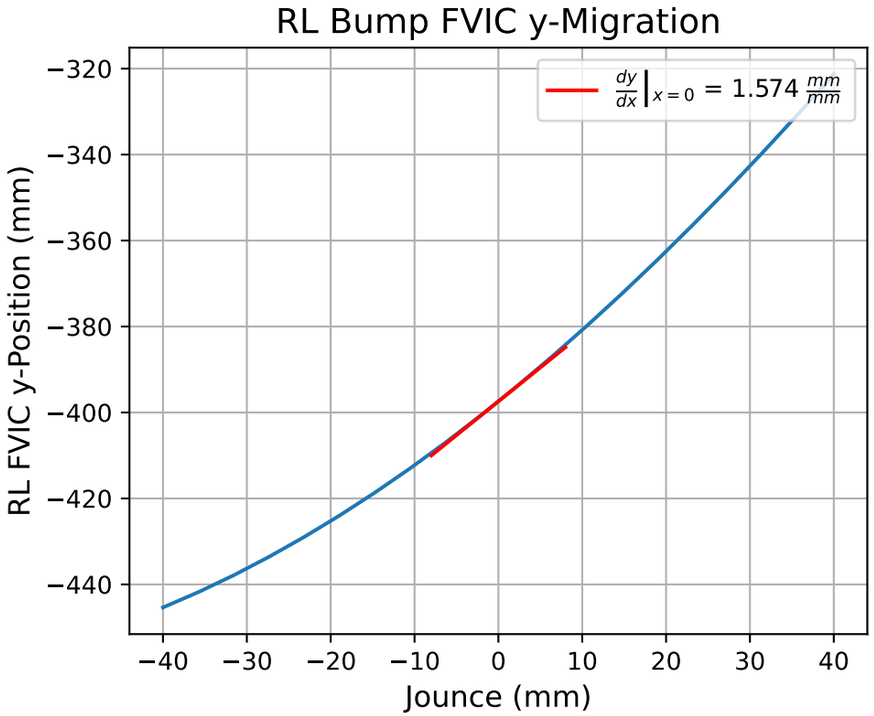
FL	$f(x) = 0.006x + 27.442$
FR	$f(x) = 0.006x + 27.442$
RL	$f(x) = 0.002x + 13.593$
RR	$f(x) = 0.002x + 13.593$

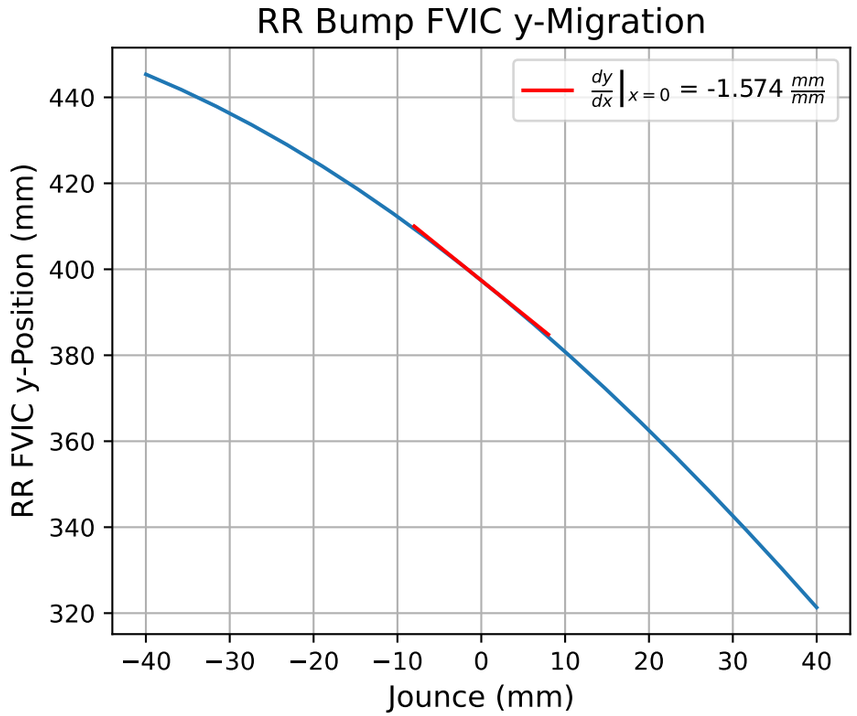
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.0x^2 + 0.006x + 27.442$
FR	$f(x) = 0.0x^3 + 0.0x^2 + 0.006x + 27.442$
RL	$f(x) = 0.0x^3 + 0.0x^2 + 0.002x + 13.593$
RR	$f(x) = 0.0x^3 + 0.0x^2 + 0.002x + 13.593$







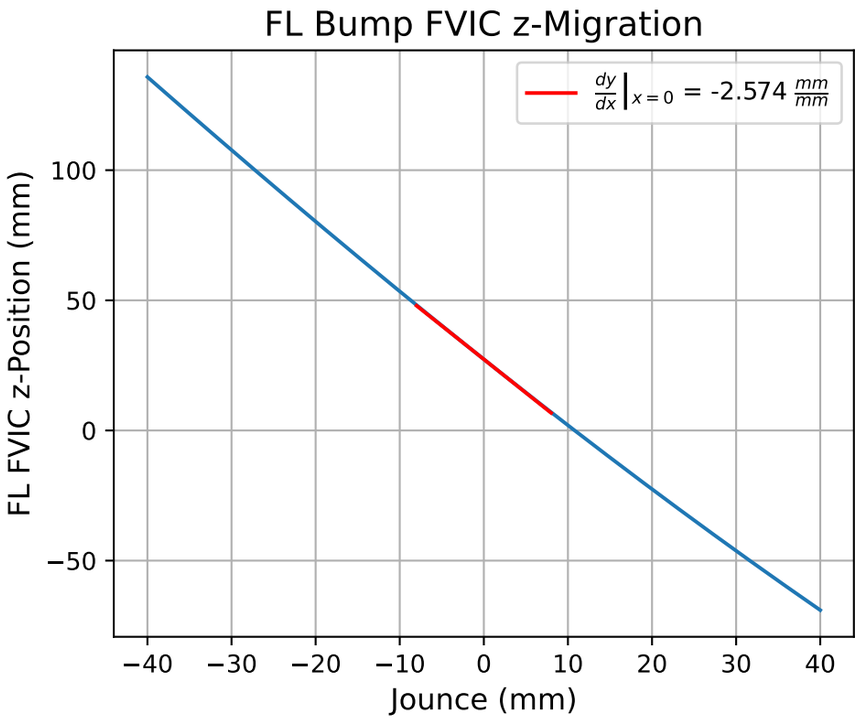


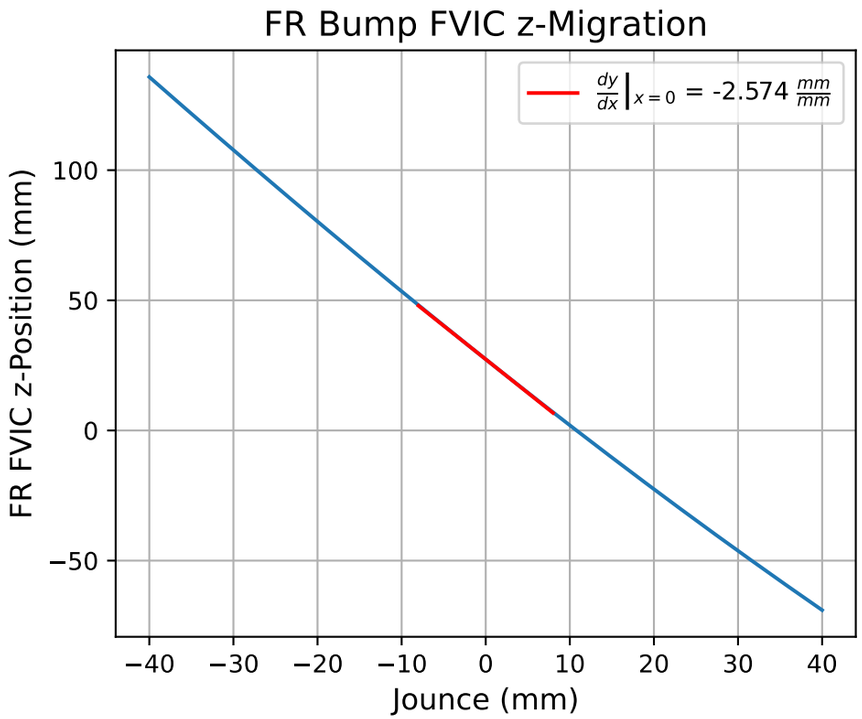
Linear Fit $f(x) = a_1x + a_0$

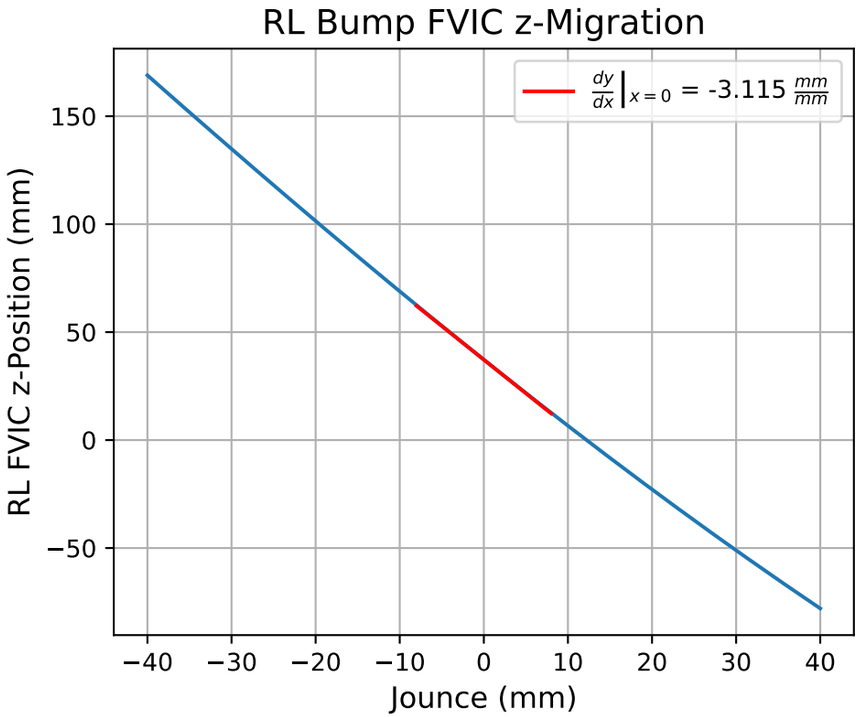
FL	$f(x) = 1.359x + -393.907$
FR	$f(x) = -1.359x + 393.907$
RL	$f(x) = 1.574x + -397.417$
RR	$f(x) = -1.574x + 397.417$

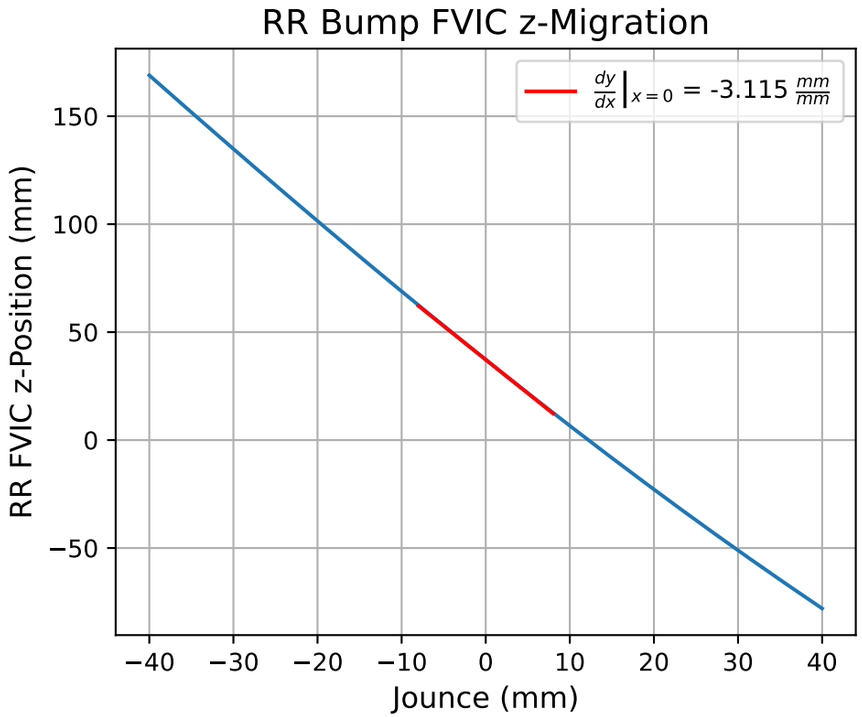
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.0x^3 + 0.005x^2 + 1.359x + -393.906$
FR	$f(x) = 0.0x^3 + -0.005x^2 + -1.359x + 393.906$
RL	$f(x) = -0.0x^3 + 0.009x^2 + 1.574x + -397.413$
RR	$f(x) = 0.0x^3 + -0.009x^2 + -1.574x + 397.413$







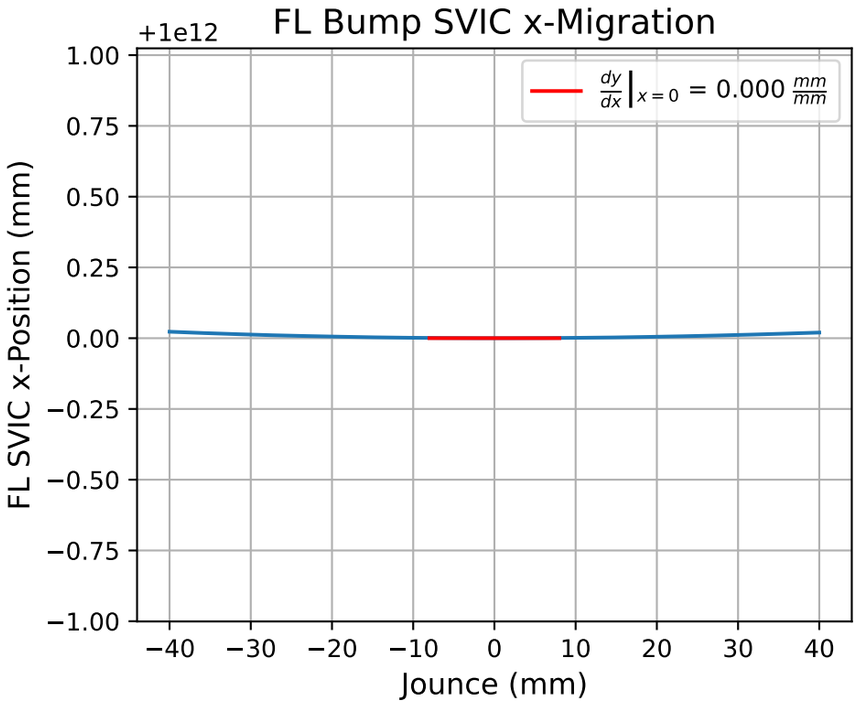


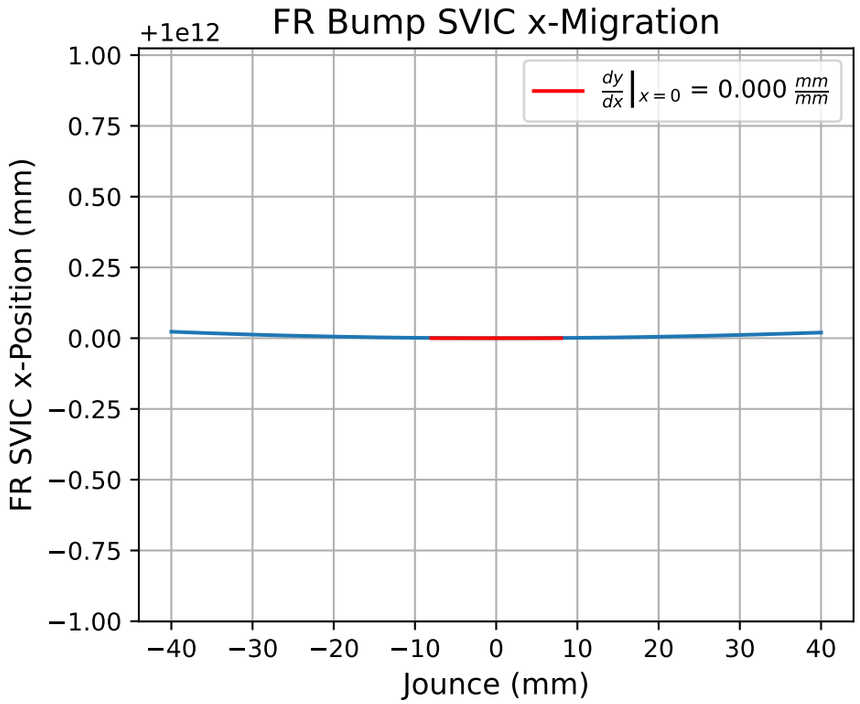
Linear Fit $f(x) = a_1x + a_0$

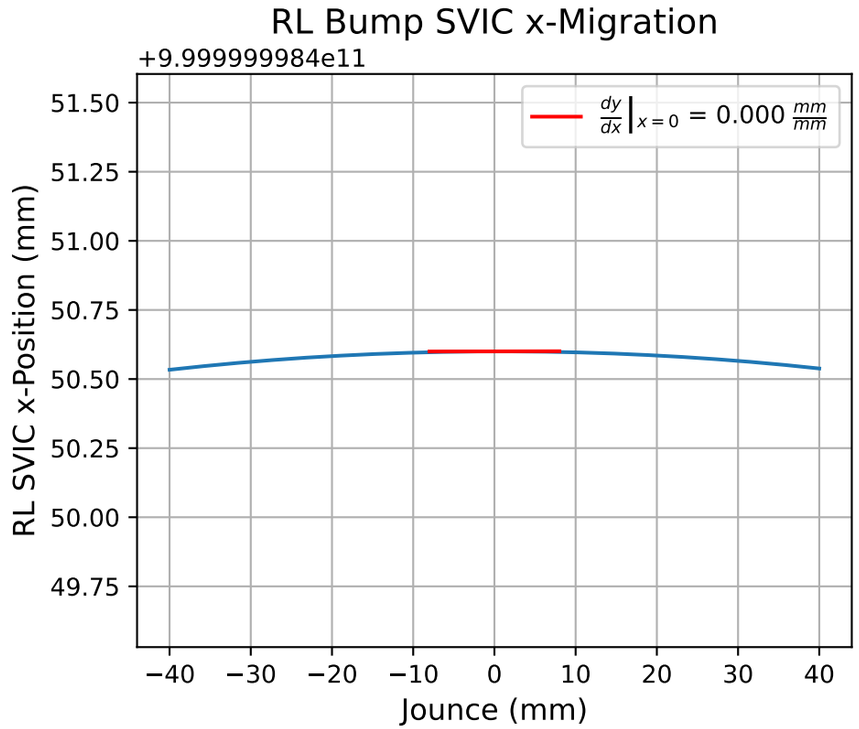
FL	$f(x) = -2.574x + 27.34$
FR	$f(x) = -2.574x + 27.34$
RL	$f(x) = -3.115x + 37.239$
RR	$f(x) = -3.115x + 37.239$

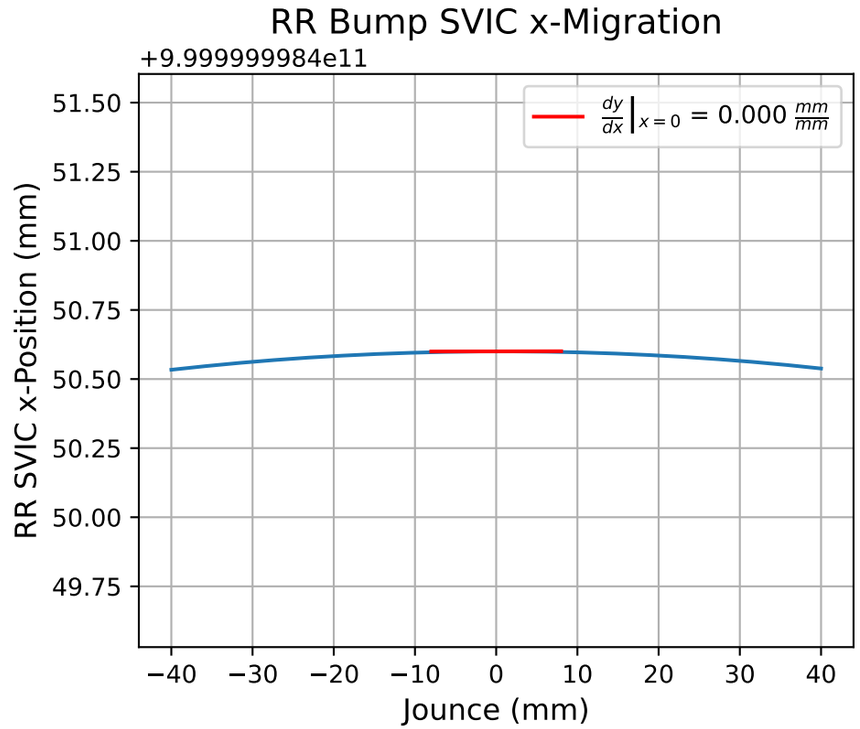
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.004x^2 + -2.574x + 27.343$
FR	$f(x) = 0.0x^3 + 0.004x^2 + -2.574x + 27.343$
RL	$f(x) = 0.0x^3 + 0.005x^2 + -3.115x + 37.245$
RR	$f(x) = 0.0x^3 + 0.005x^2 + -3.115x + 37.245$







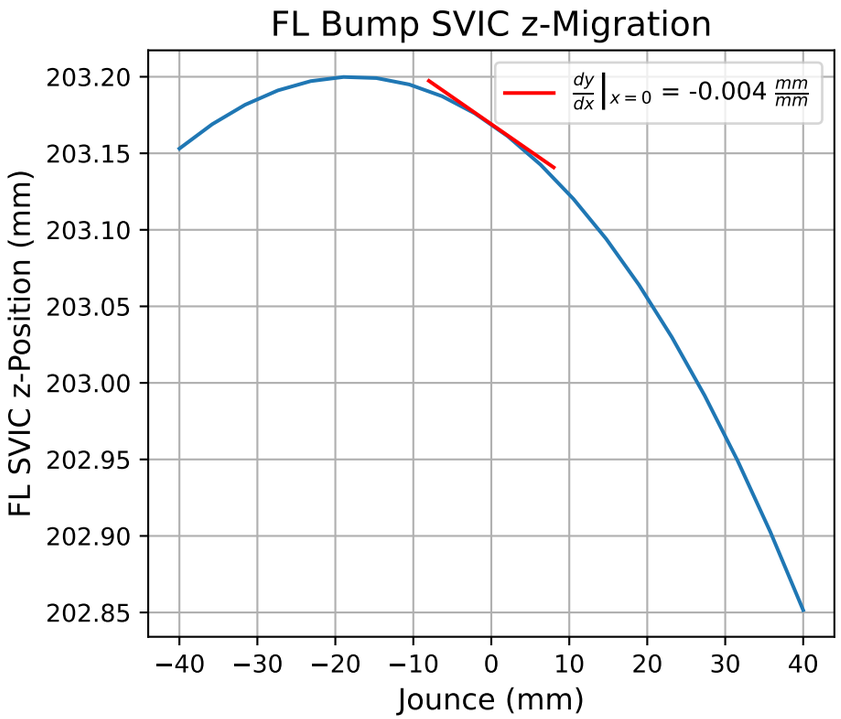


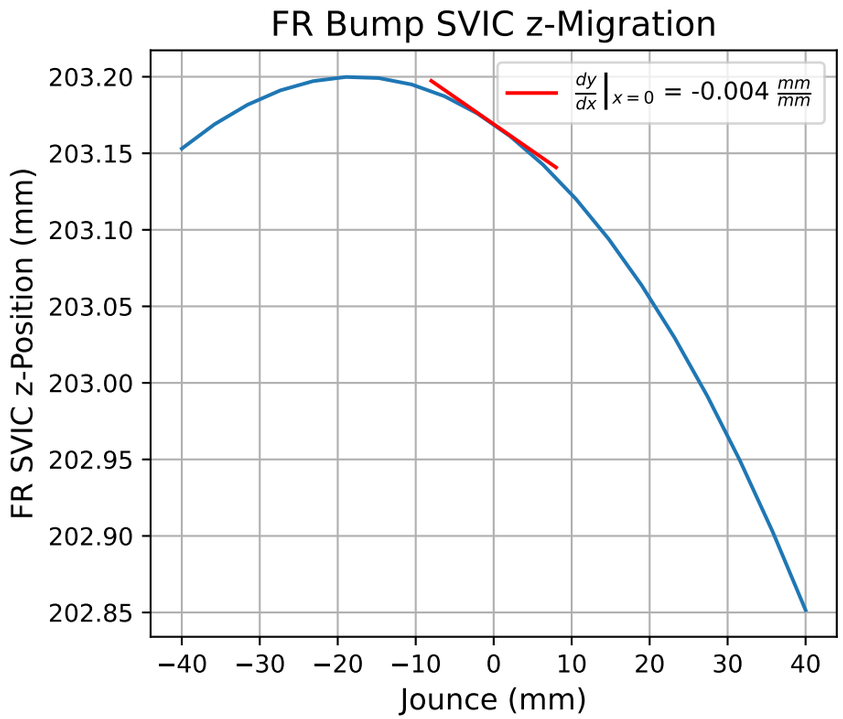
Linear Fit $f(x) = a_1x + a_0$

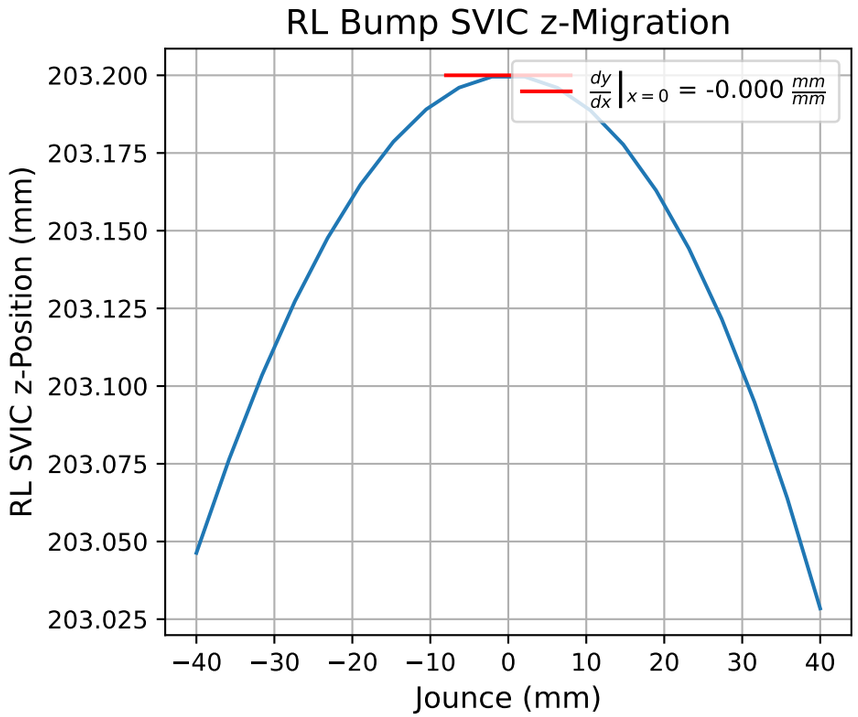
FL	$f(x) = 0.0x + 1.000e+12$
FR	$f(x) = 0.0x + 1.000e+12$
RL	$f(x) = 0.0x + 1.000e+12$
RR	$f(x) = 0.0x + 1.000e+12$

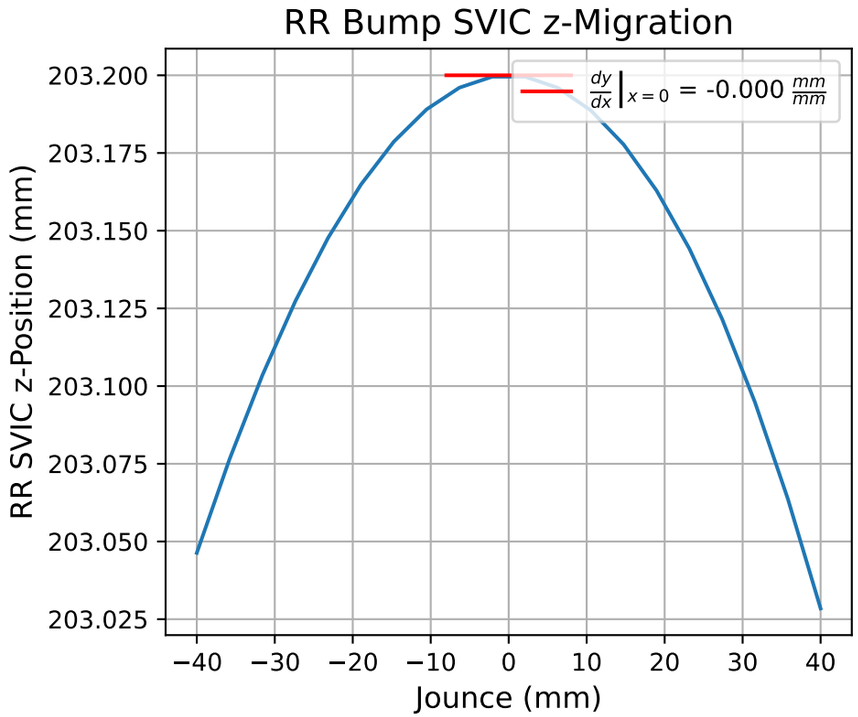
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.0x^2 + -0.0x + 1.0e+12$
FR	$f(x) = 0.0x^3 + 0.0x^2 + -0.0x + 1.0e+12$
RL	$f(x) = 0.0x^3 + -0.0x^2 + 0.0x + 1.0e+12$
RR	$f(x) = 0.0x^3 + -0.0x^2 + 0.0x + 1.0e+12$







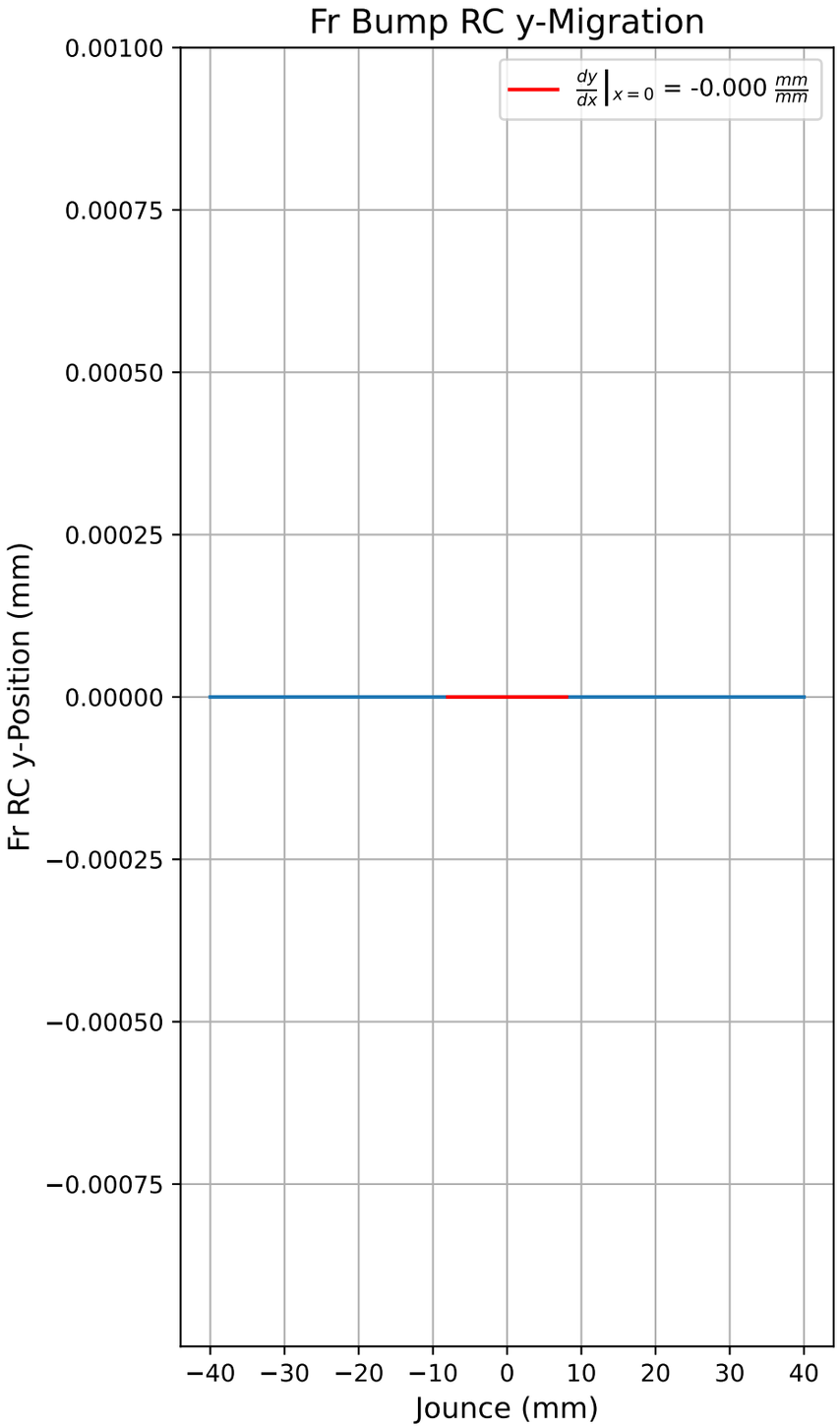


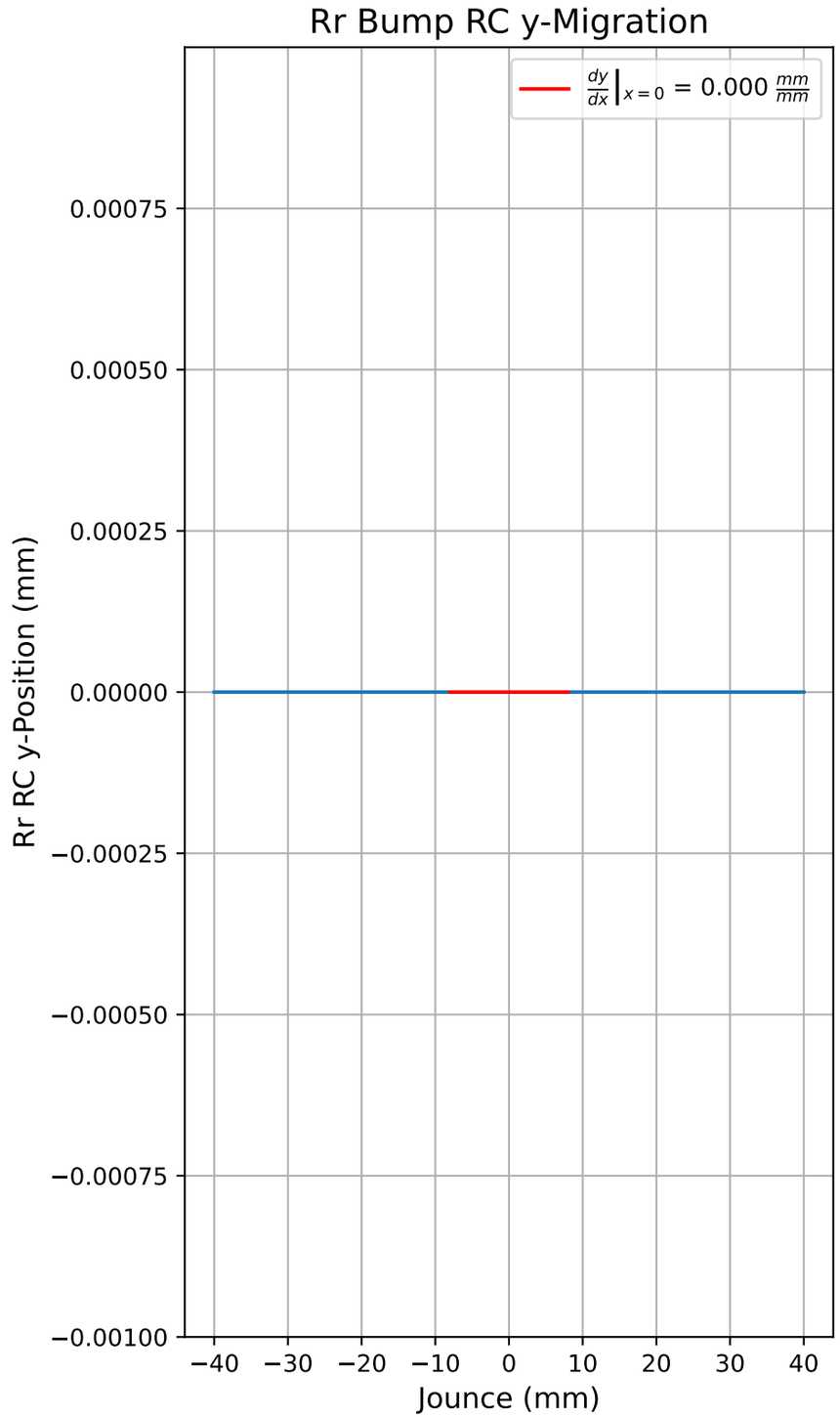
Linear Fit $f(x) = a_1x + a_0$

FL	$f(x) = -0.004x + 203.169$
FR	$f(x) = -0.004x + 203.169$
RL	$f(x) = -0.0x + 203.2$
RR	$f(x) = -0.0x + 203.2$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.0x^3 + -0.0x^2 + -0.004x + 203.169$
FR	$f(x) = -0.0x^3 + -0.0x^2 + -0.004x + 203.169$
RL	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 203.2$
RR	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 203.2$



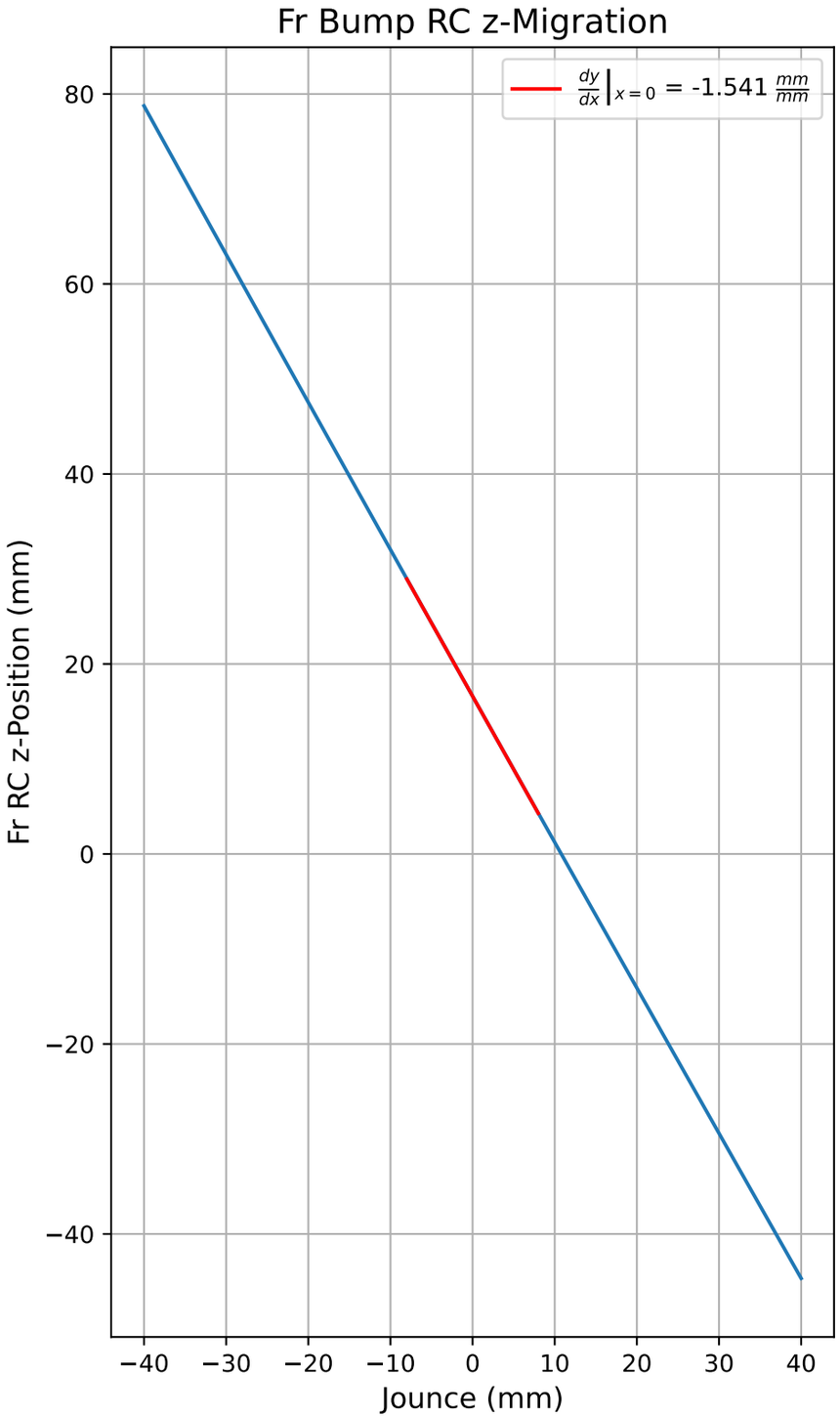


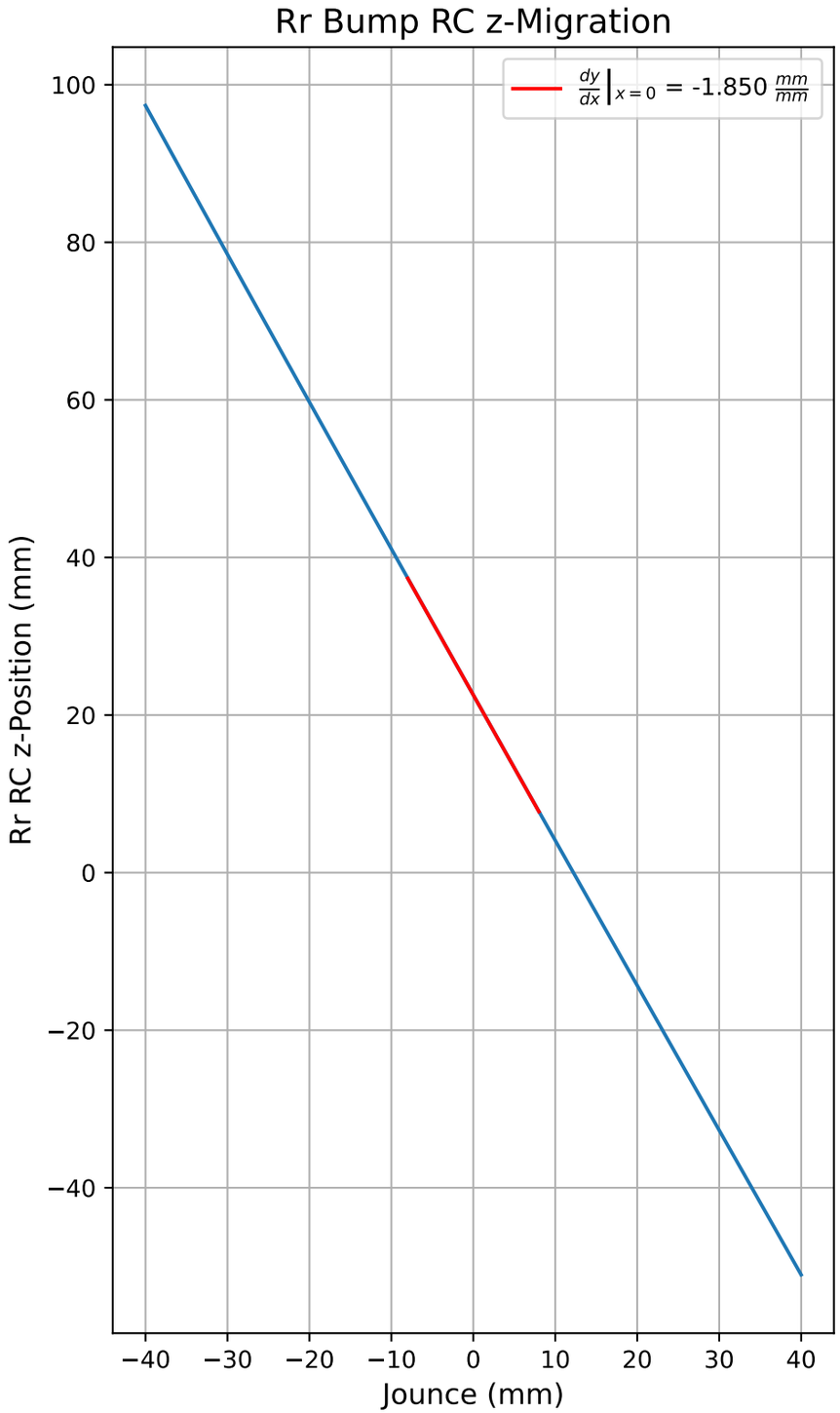
Linear Fit $f(x) = a_1x + a_0$

Fr	$f(x) = -0.0x + -0.0$
Rr	$f(x) = 0.0x + -0.0$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

Fr	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 0.0$
Rr	$f(x) = 0.0x^3 + 0.0x^2 + -0.0x + -0.0$



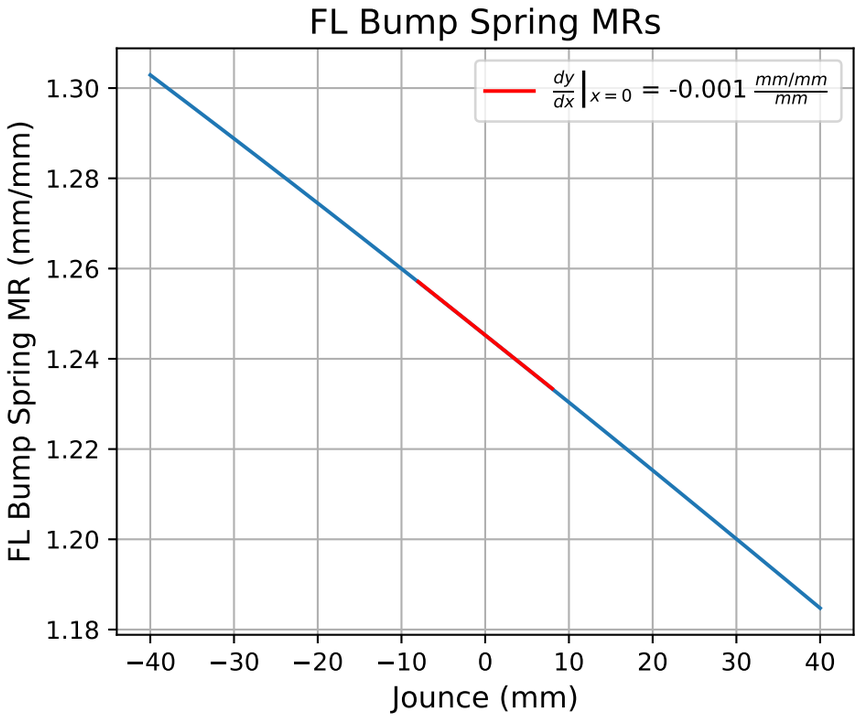


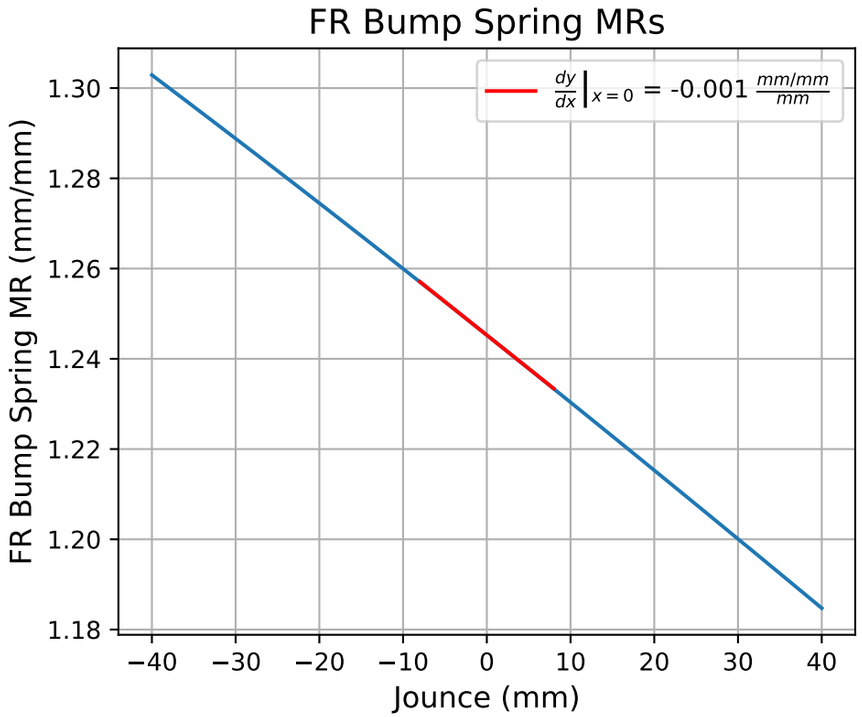
Linear Fit $f(x) = a_1x + a_0$

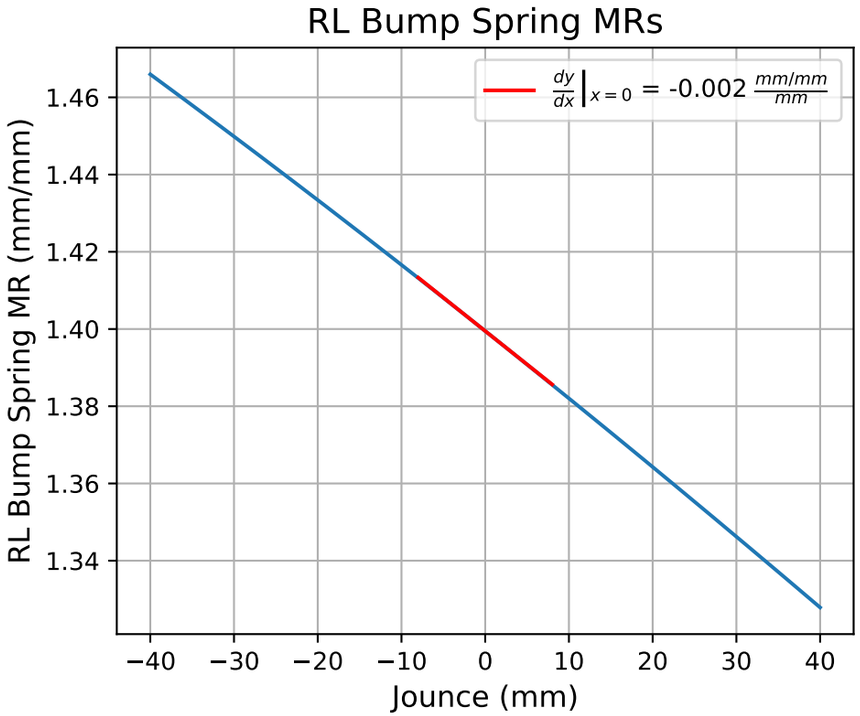
Fr	$f(x) = -1.541x + 16.608$
Rr	$f(x) = -1.85x + 22.543$

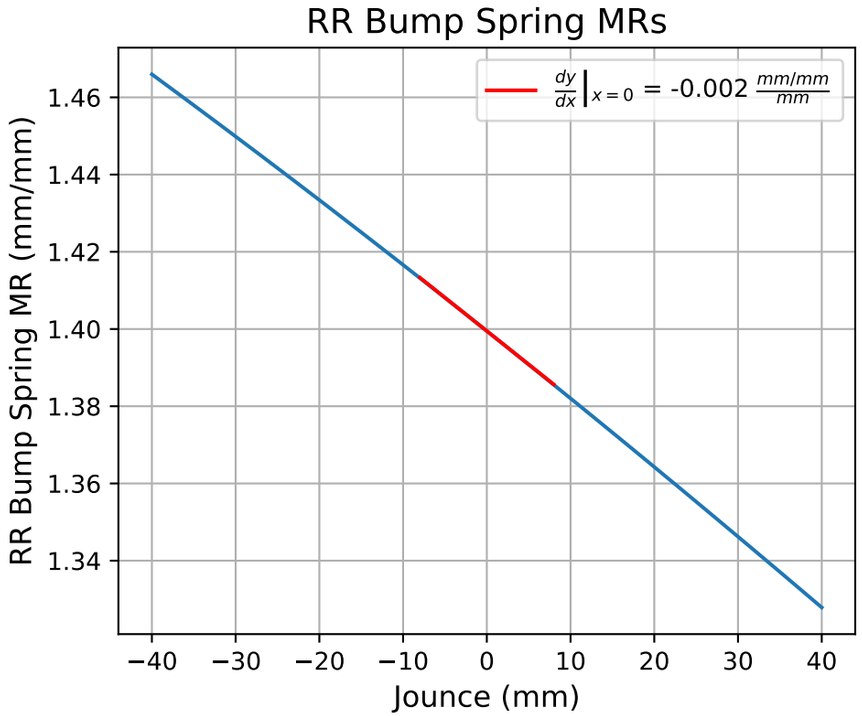
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

Fr	$f(x) = -0.0x^3 + 0.0x^2 + -1.541x + 16.607$
Rr	$f(x) = -0.0x^3 + 0.0x^2 + -1.85x + 22.541$







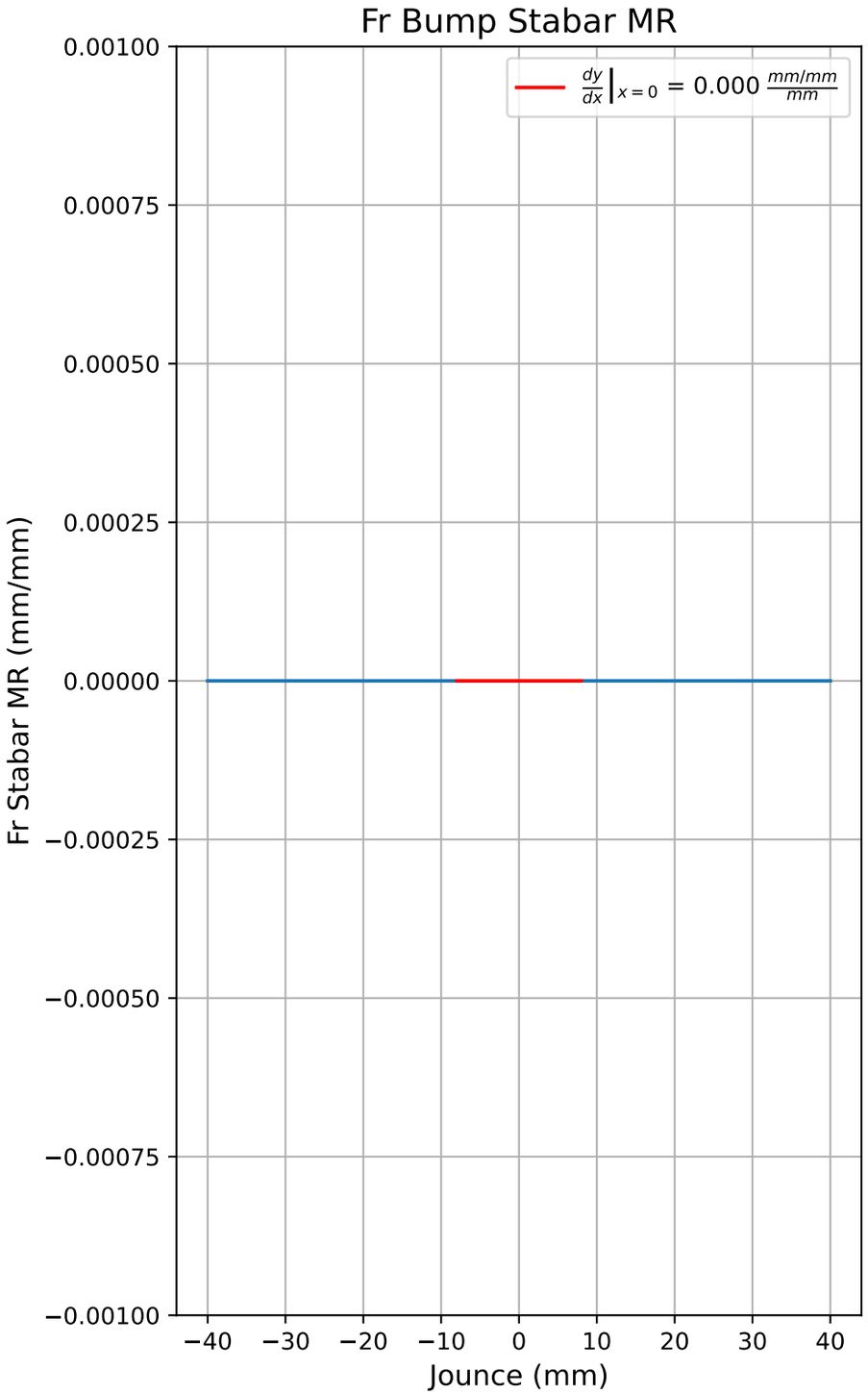


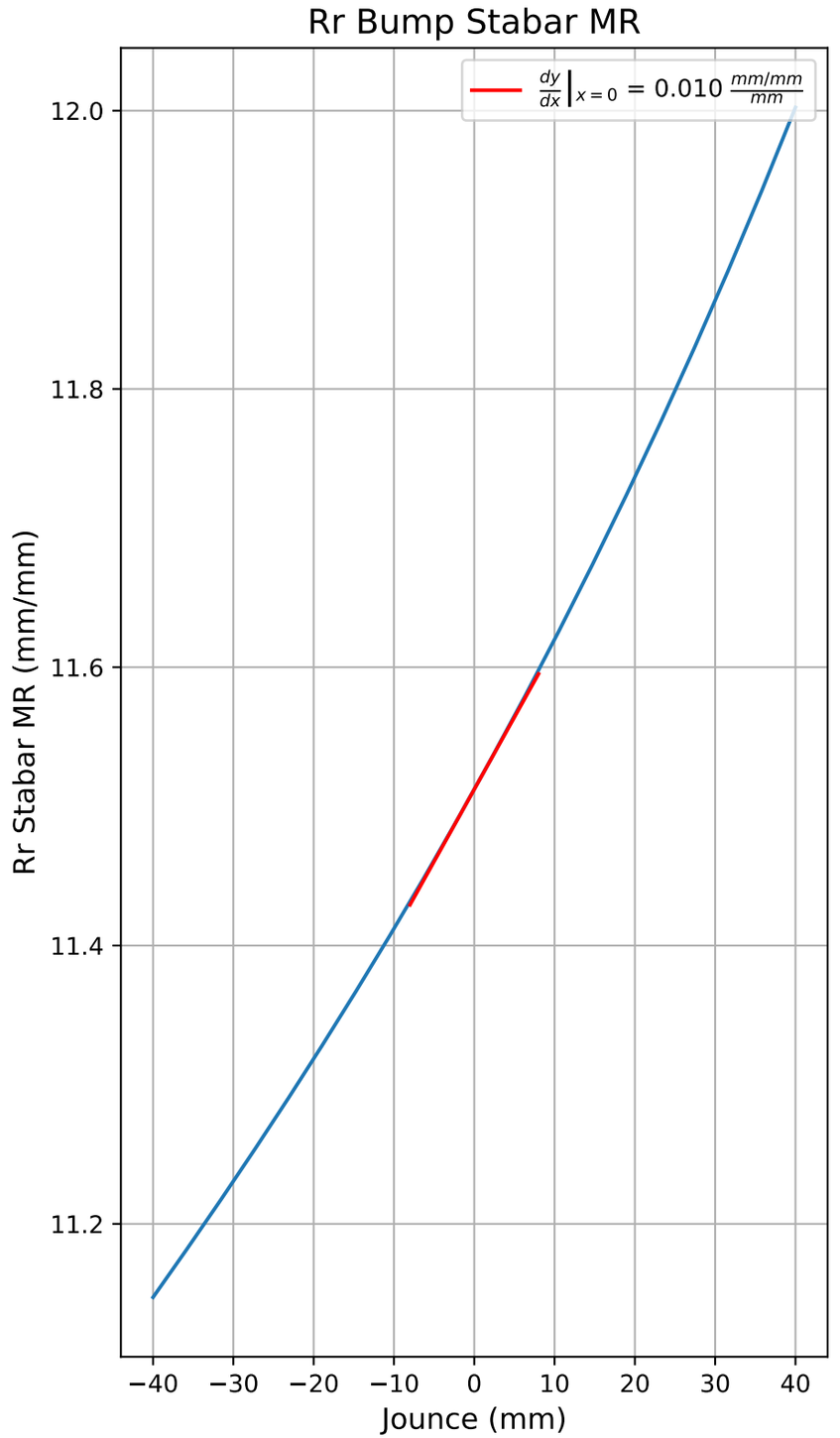
Linear Fit $f(x) = a_1x + a_0$

FL	$f(x) = -0.001x + 1.245$
FR	$f(x) = -0.001x + 1.245$
RL	$f(x) = -0.002x + 1.399$
RR	$f(x) = -0.002x + 1.399$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + -0.0x^2 + -0.001x + 1.245$
FR	$f(x) = 0.0x^3 + -0.0x^2 + -0.001x + 1.245$
RL	$f(x) = 0.0x^3 + -0.0x^2 + -0.002x + 1.399$
RR	$f(x) = 0.0x^3 + -0.0x^2 + -0.002x + 1.399$



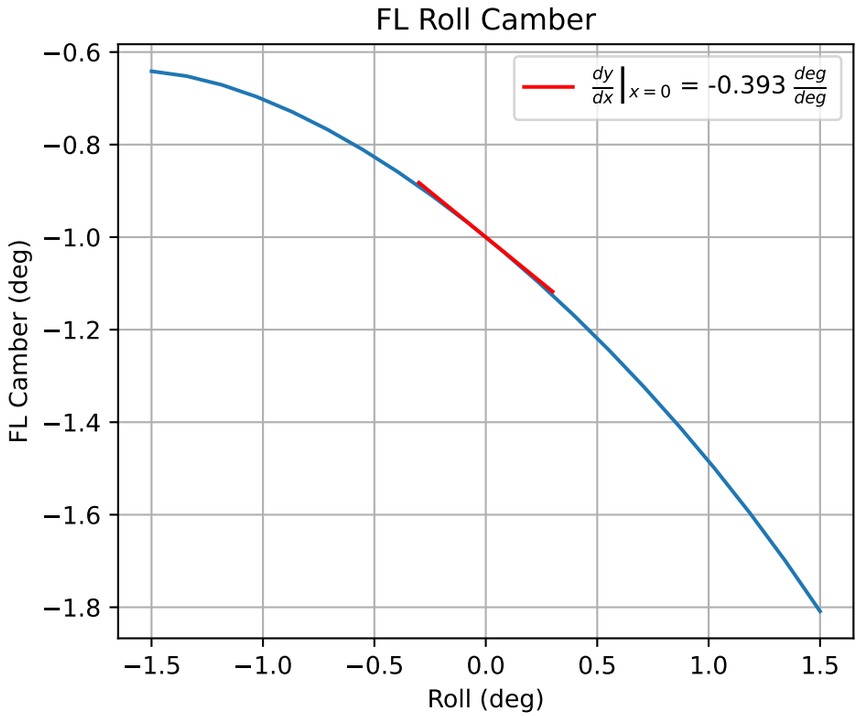


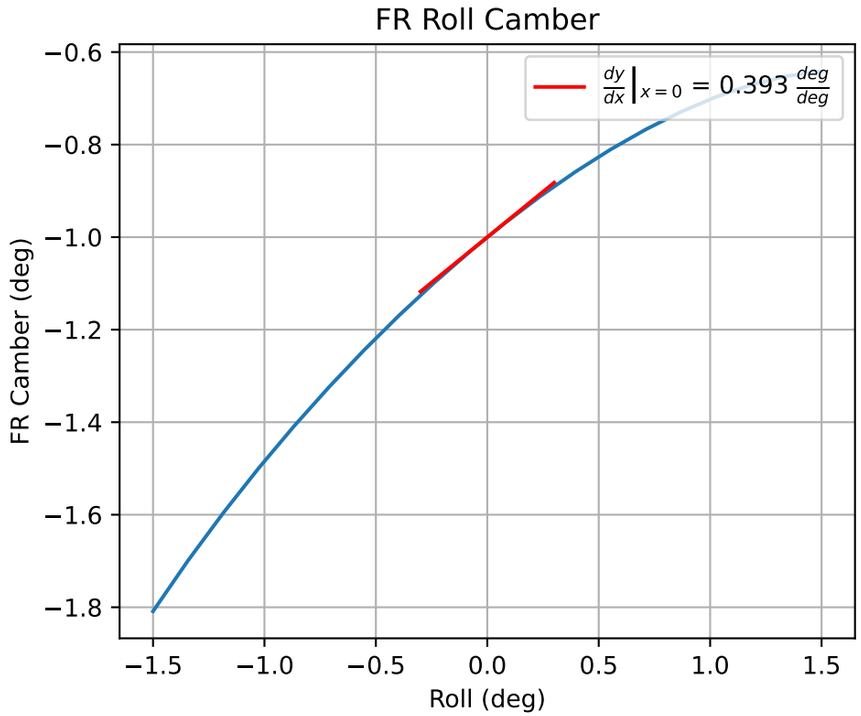
Linear Fit $f(x) = a_1x + a_0$

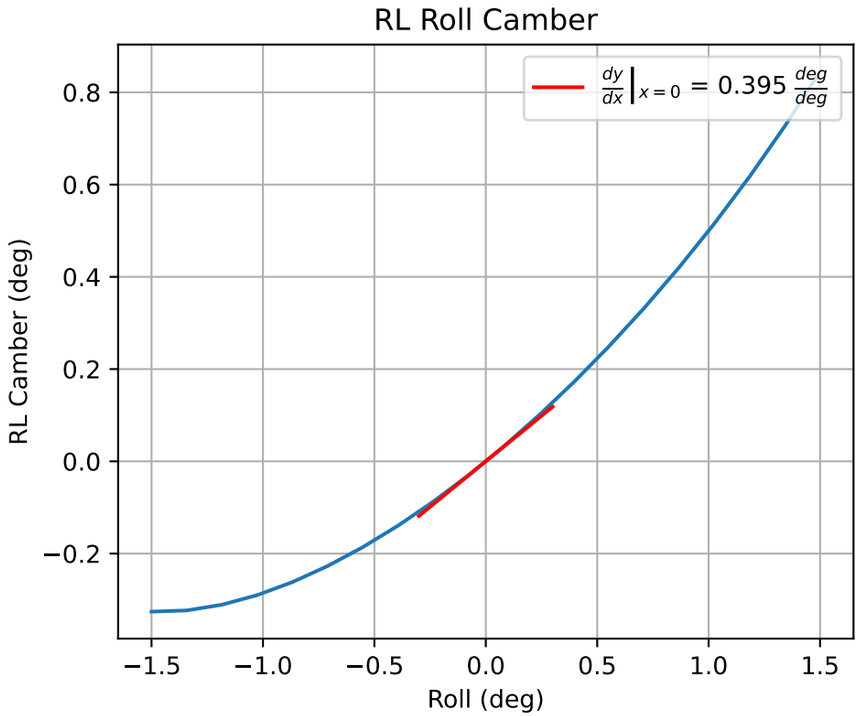
Fr	$f(x) = 0.0x + 0.0$
Rr	$f(x) = 0.01x + 11.512$

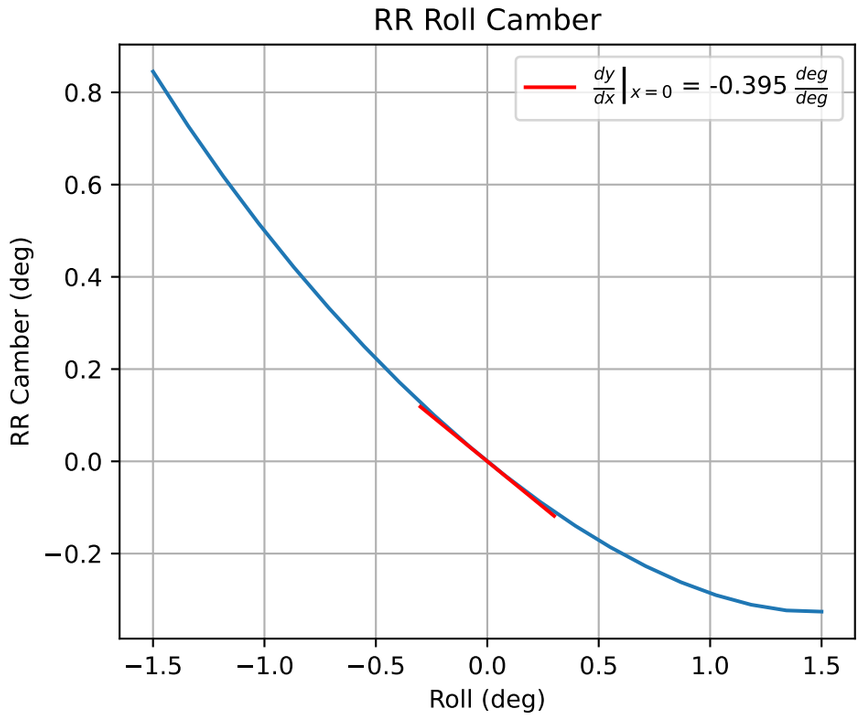
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

Fr	$f(x) = 0.0x^3 + 0.0x^2 + 0.0x + 0.0$
Rr	$f(x) = 0.0x^3 + 0.0x^2 + 0.01x + 11.512$







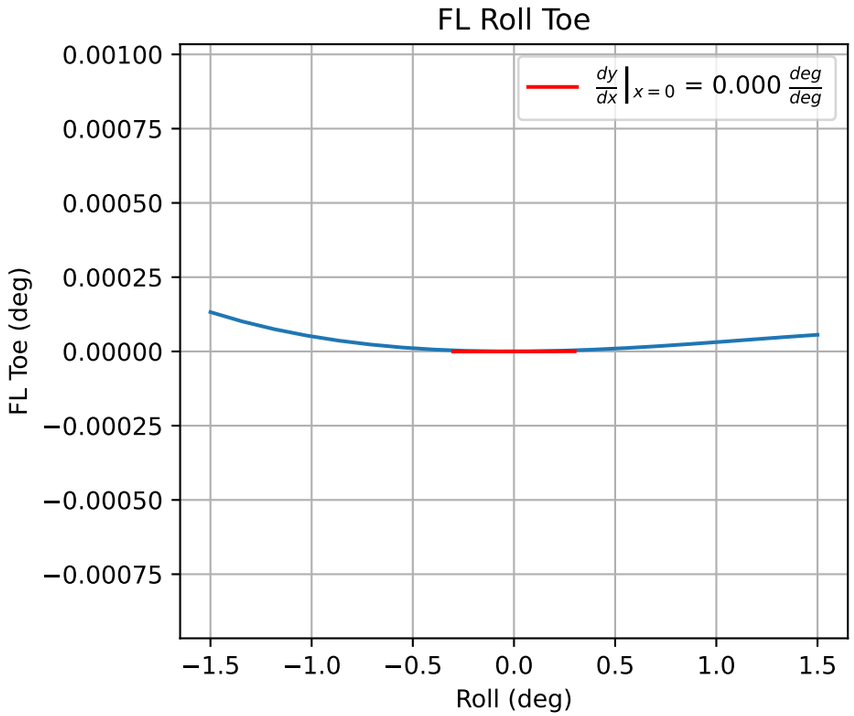


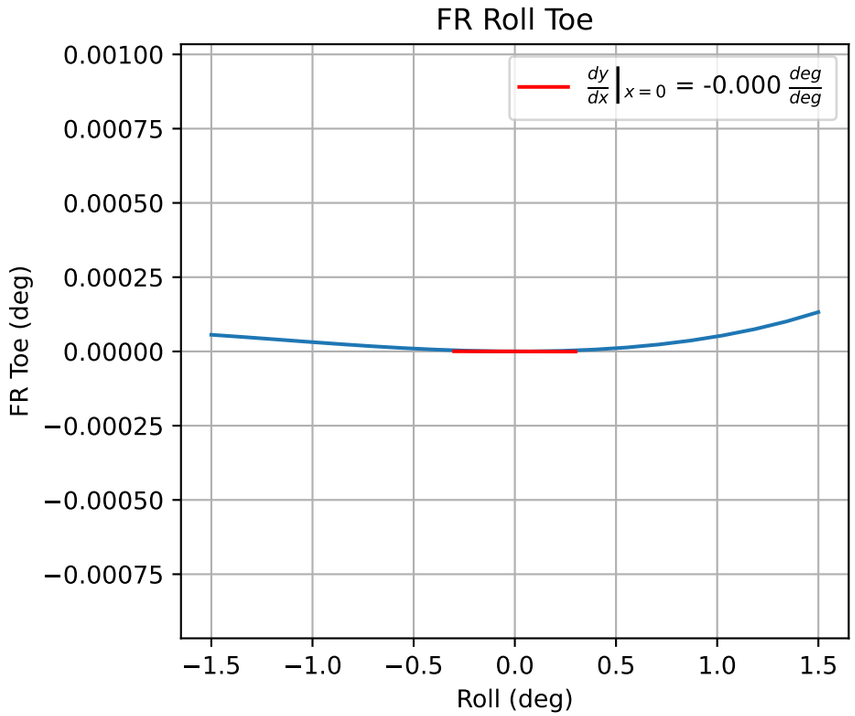
Linear Fit $f(x) = a_1x + a_0$

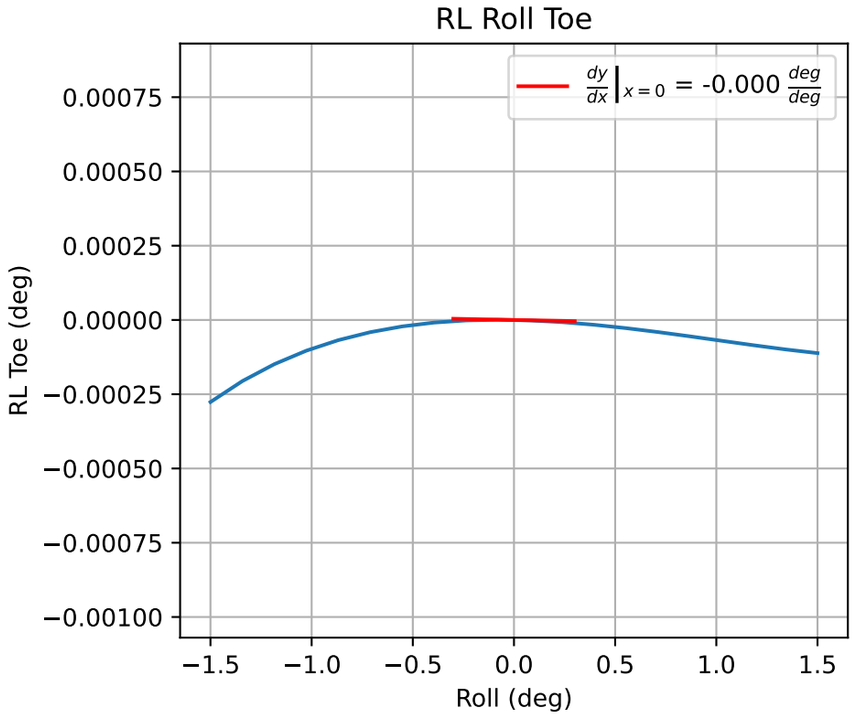
FL	$f(x) = -0.393x + -1.0$
FR	$f(x) = 0.393x + -1.0$
RL	$f(x) = 0.395x + -0.0$
RR	$f(x) = -0.395x + -0.0$

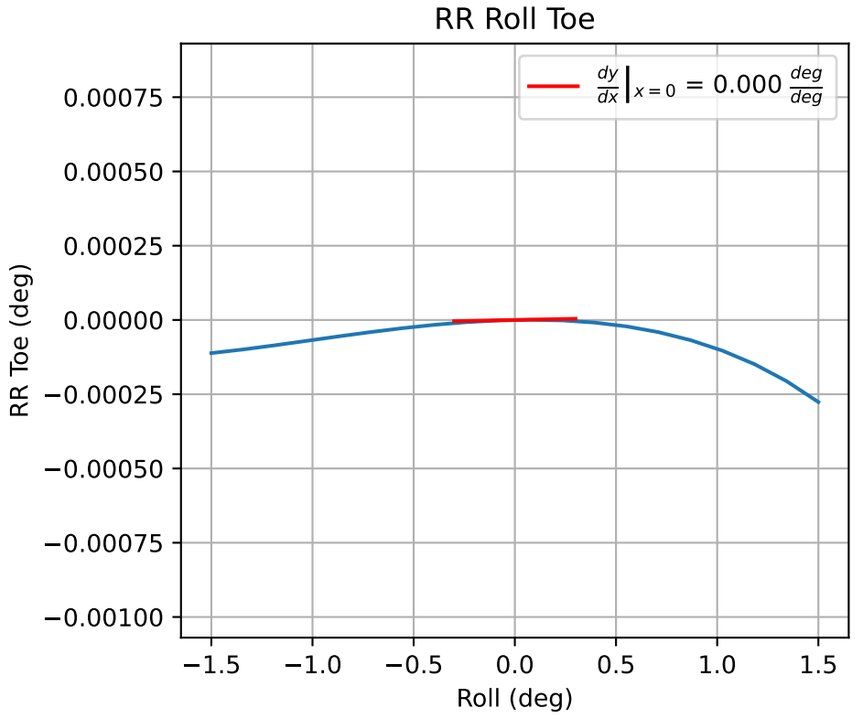
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.002x^3 + -0.099x^2 + -0.393x + -0.997$
FR	$f(x) = -0.002x^3 + -0.099x^2 + 0.393x + -0.997$
RL	$f(x) = -0.002x^3 + 0.114x^2 + 0.395x + -0.003$
RR	$f(x) = 0.002x^3 + 0.114x^2 + -0.395x + -0.003$







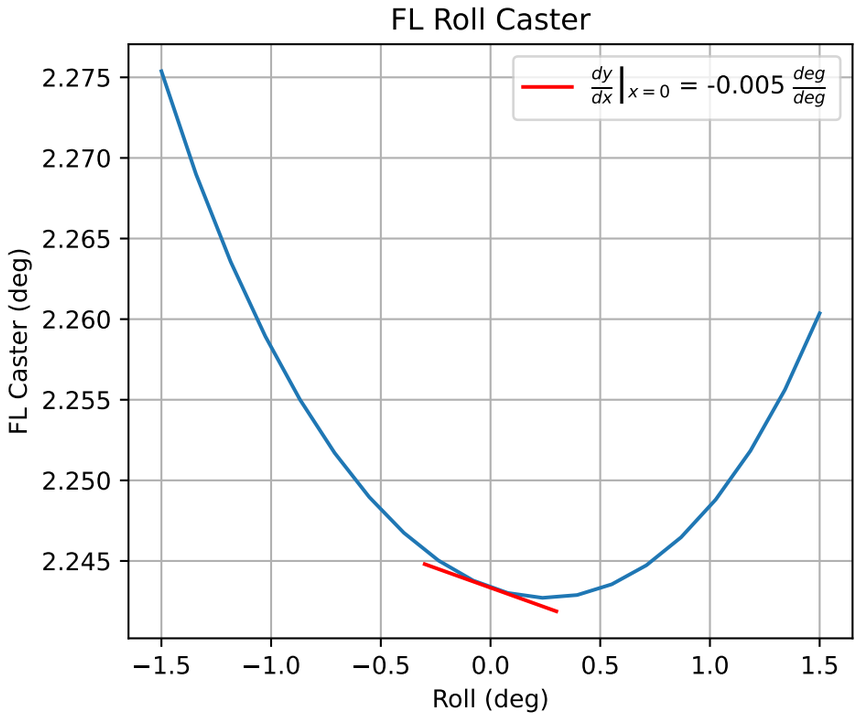


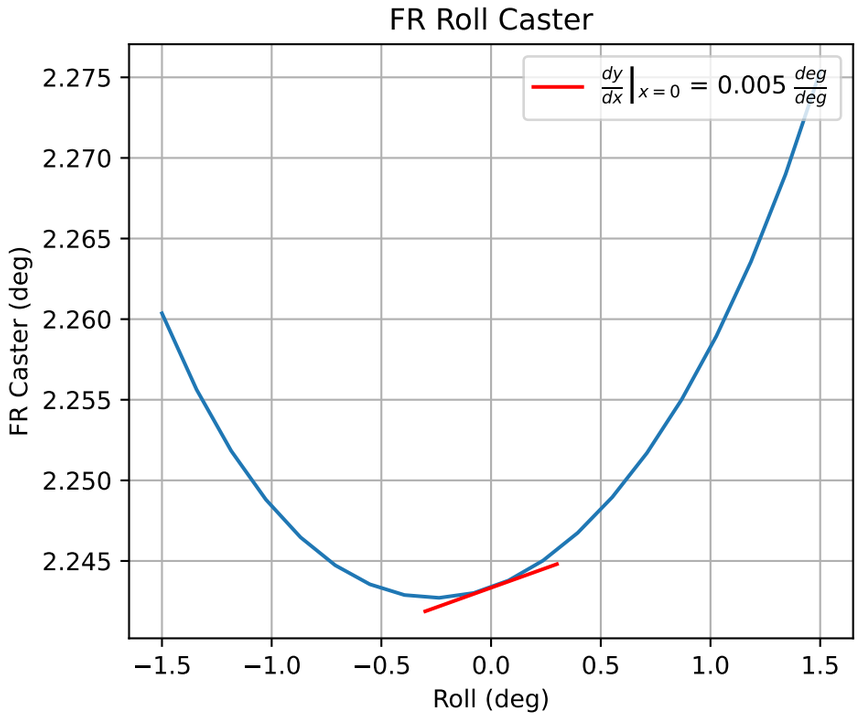
Linear Fit $f(x) = a_1x + a_0$

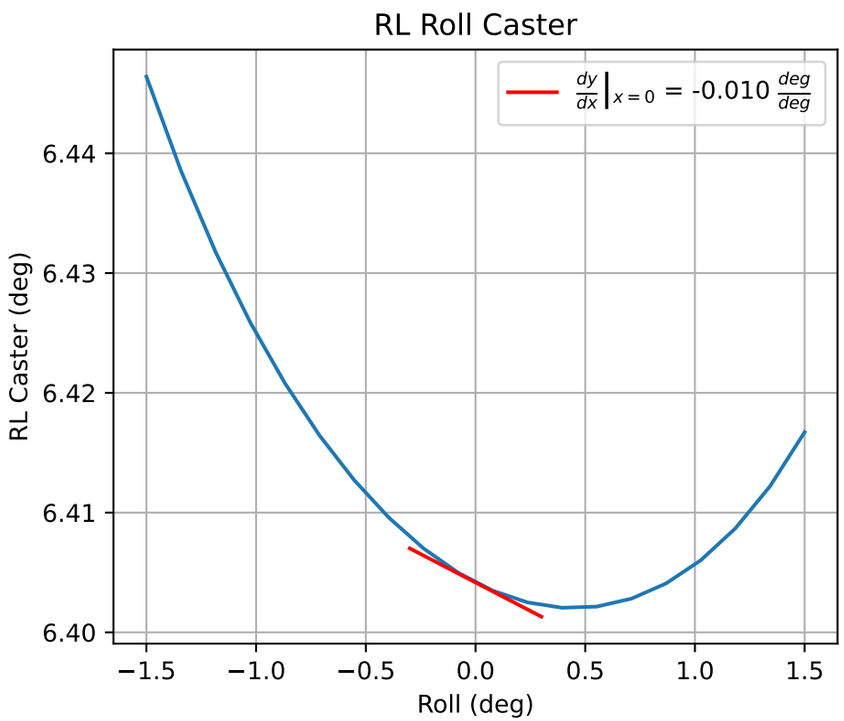
FL	$f(x) = 0.0x + -0.0$
FR	$f(x) = -0.0x + -0.0$
RL	$f(x) = -0.0x + 0.0$
RR	$f(x) = 0.0x + 0.0$

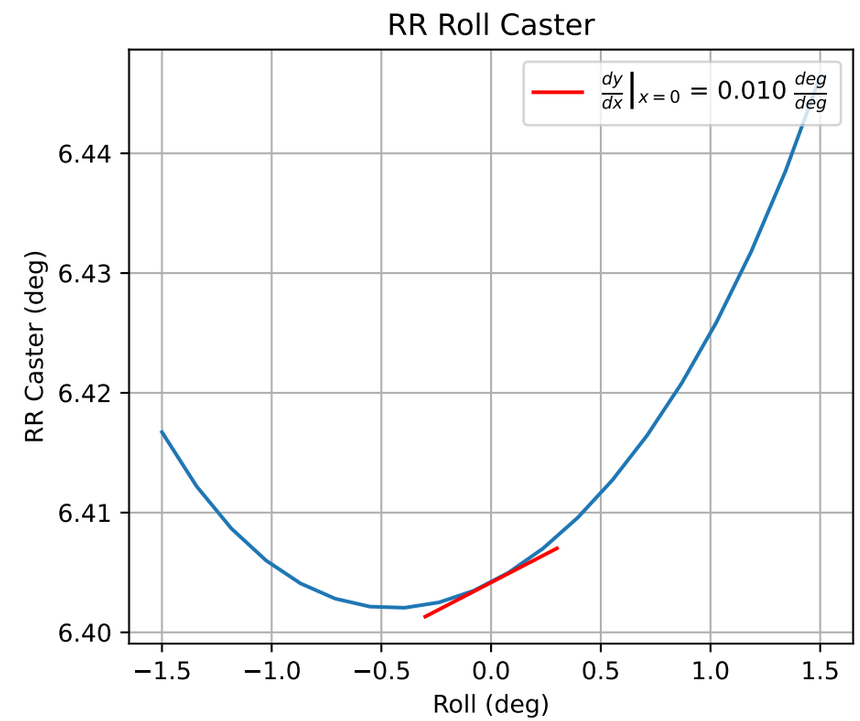
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.0x^3 + 0.0x^2 + 0.0x + -0.0$
FR	$f(x) = 0.0x^3 + 0.0x^2 + -0.0x + -0.0$
RL	$f(x) = 0.0x^3 + -0.0x^2 + -0.0x + 0.0$
RR	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 0.0$







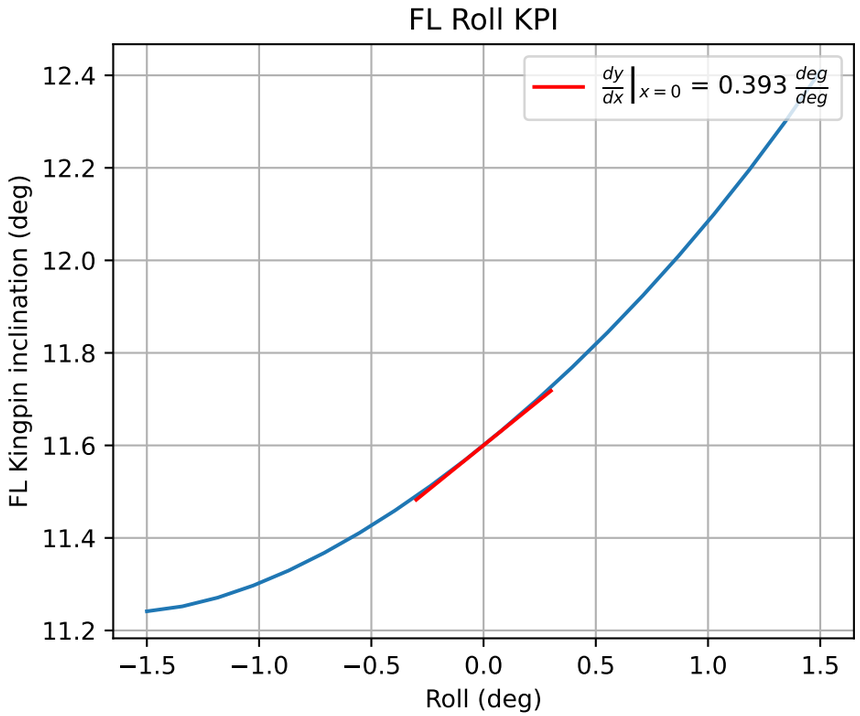


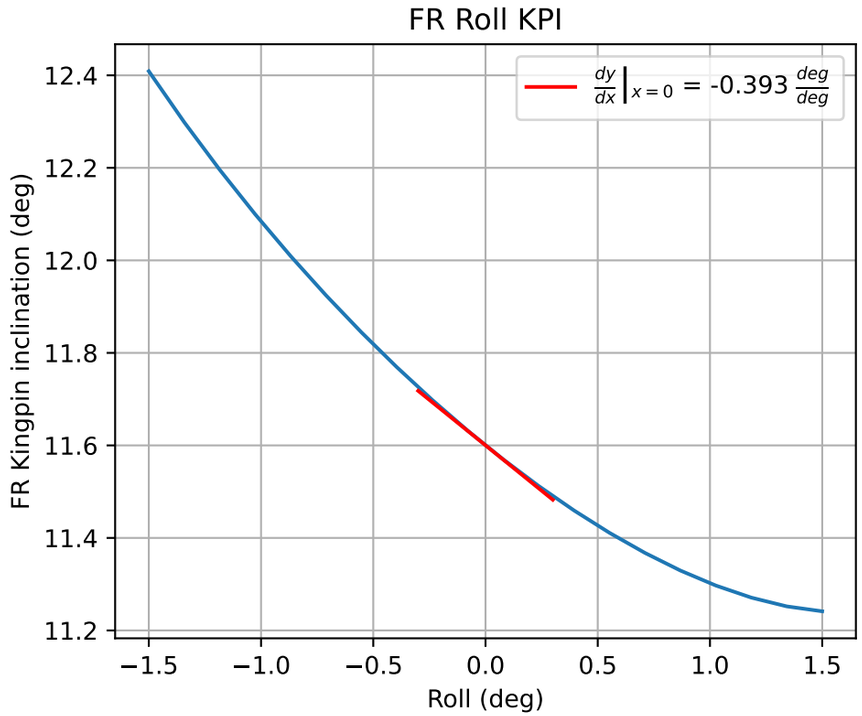
Linear Fit $f(x) = a_1x + a_0$

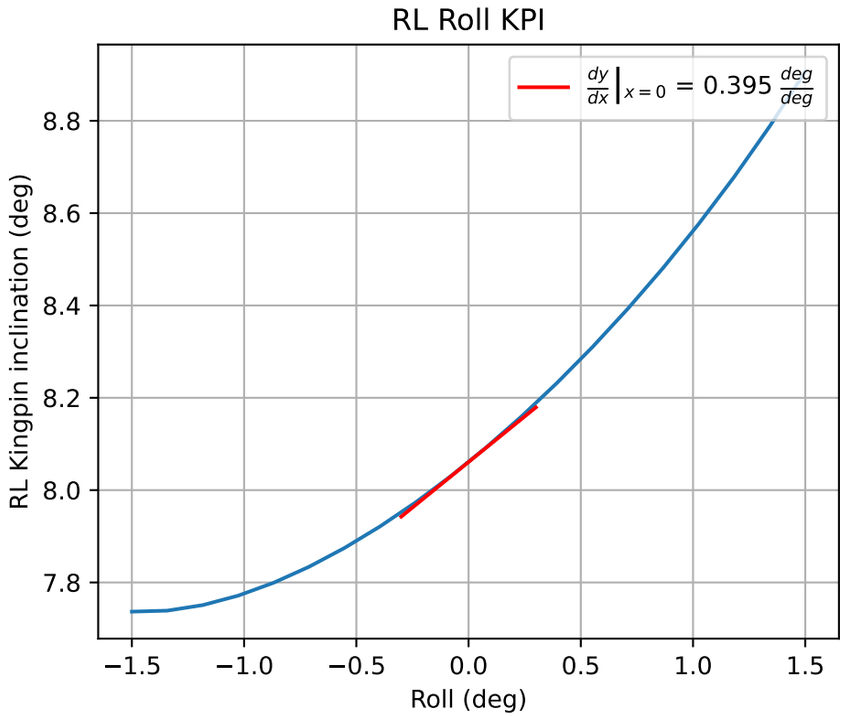
FL	$f(x) = -0.005x + 2.243$
FR	$f(x) = 0.005x + 2.243$
RL	$f(x) = -0.01x + 6.404$
RR	$f(x) = 0.01x + 6.404$

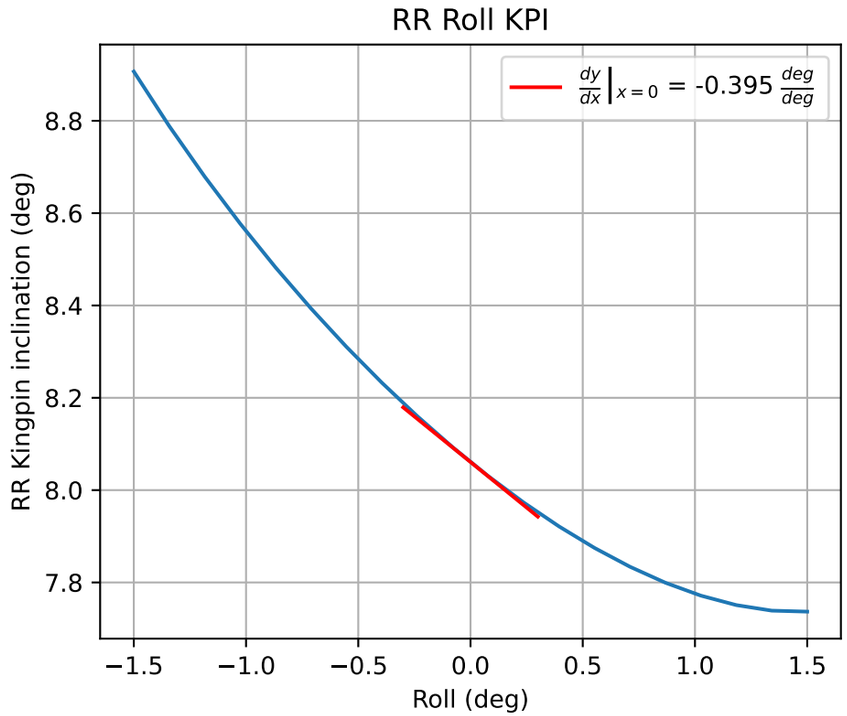
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.0x^3 + 0.011x^2 + -0.005x + 2.243$
FR	$f(x) = 0.0x^3 + 0.011x^2 + 0.005x + 2.243$
RL	$f(x) = -0.0x^3 + 0.012x^2 + -0.009x + 6.404$
RR	$f(x) = 0.0x^3 + 0.012x^2 + 0.009x + 6.404$







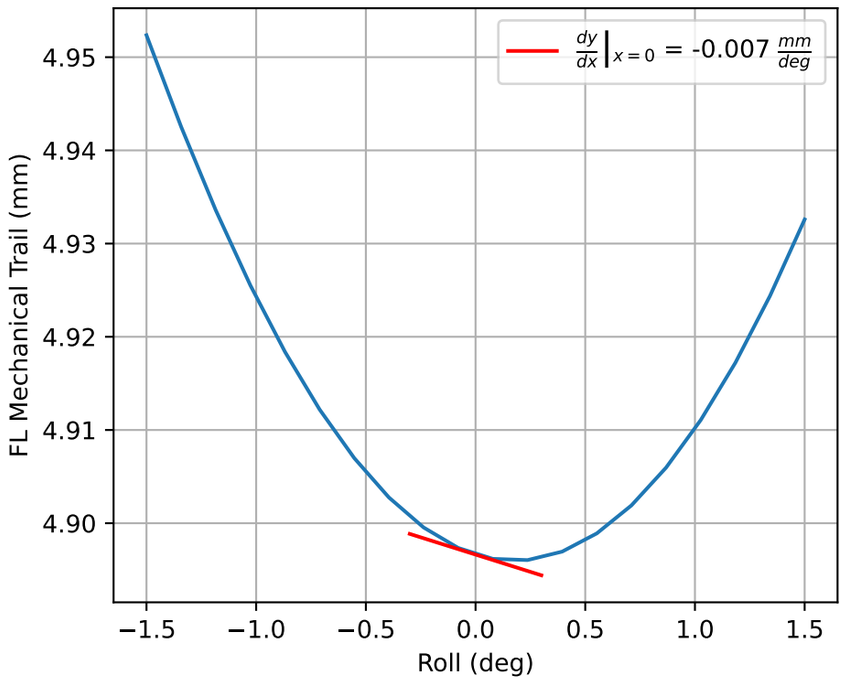


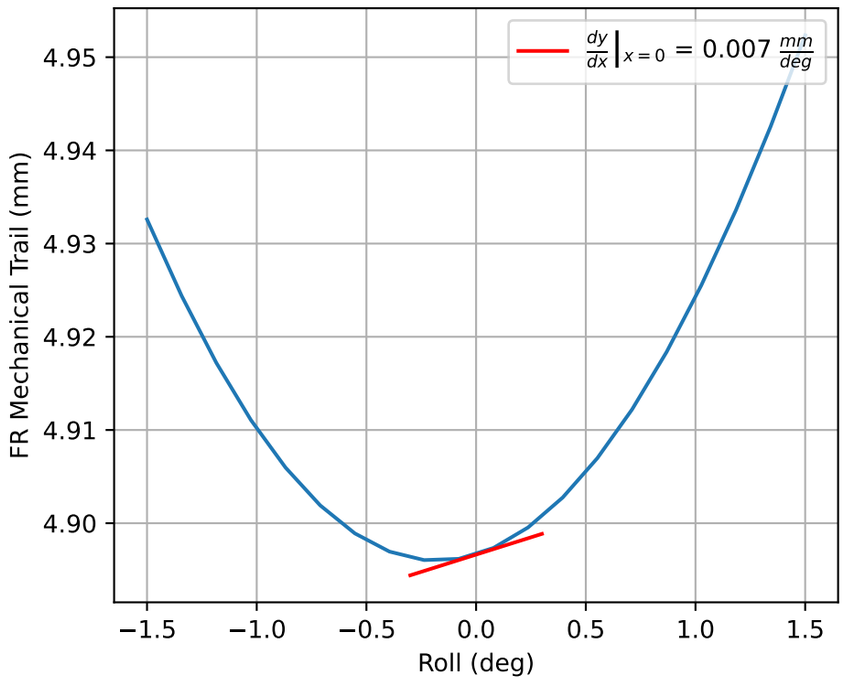
Linear Fit $f(x) = a_1x + a_0$

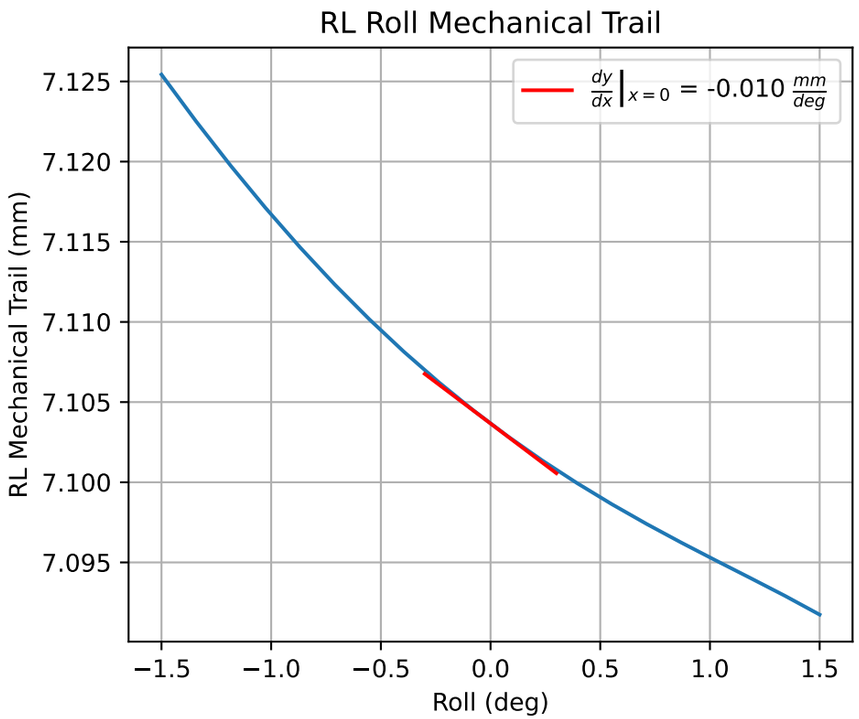
FL	$f(x) = 0.393x + 11.6$
FR	$f(x) = -0.393x + 11.6$
RL	$f(x) = 0.395x + 8.061$
RR	$f(x) = -0.395x + 8.061$

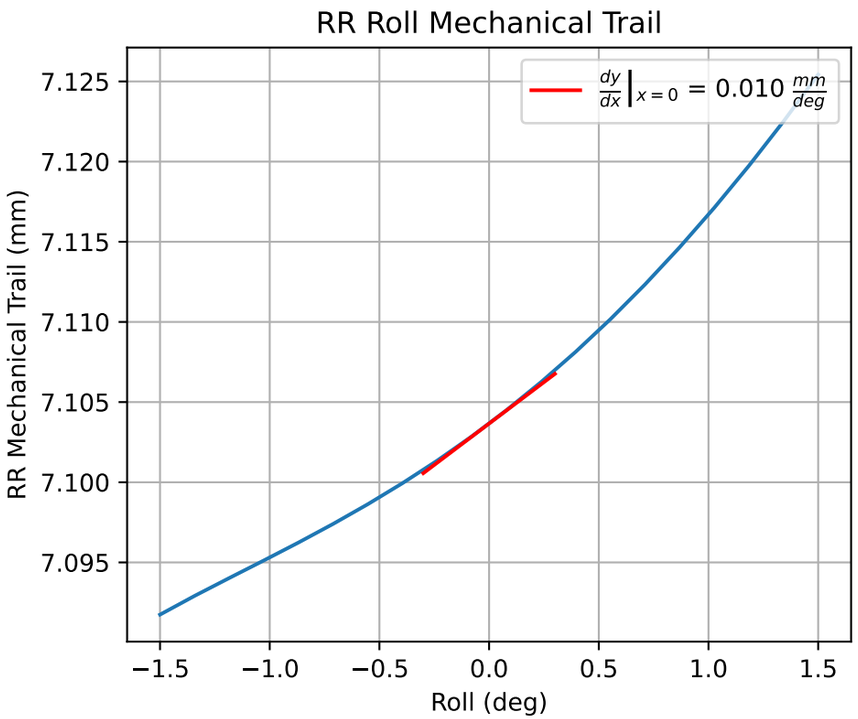
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.002x^3 + 0.099x^2 + 0.393x + 11.597$
FR	$f(x) = 0.002x^3 + 0.099x^2 + -0.393x + 11.597$
RL	$f(x) = -0.002x^3 + 0.115x^2 + 0.395x + 8.058$
RR	$f(x) = 0.002x^3 + 0.115x^2 + -0.395x + 8.058$







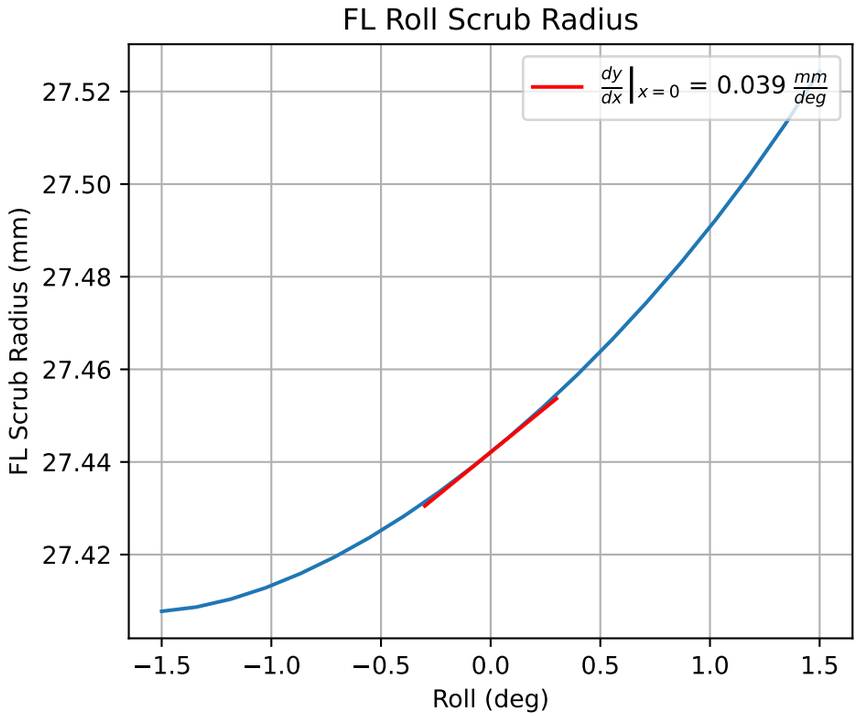


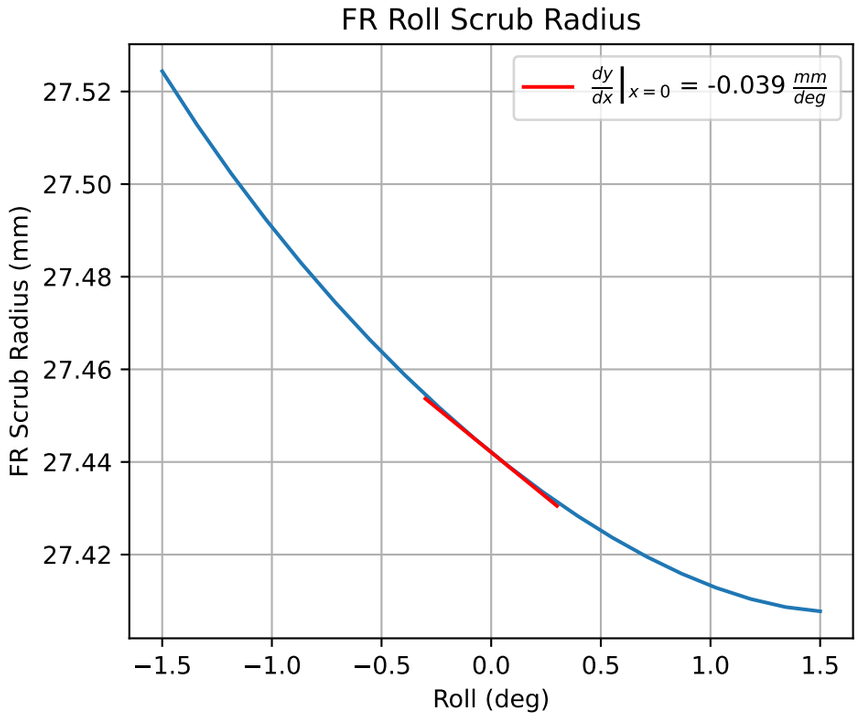
Linear Fit $f(x) = a_1x + a_0$

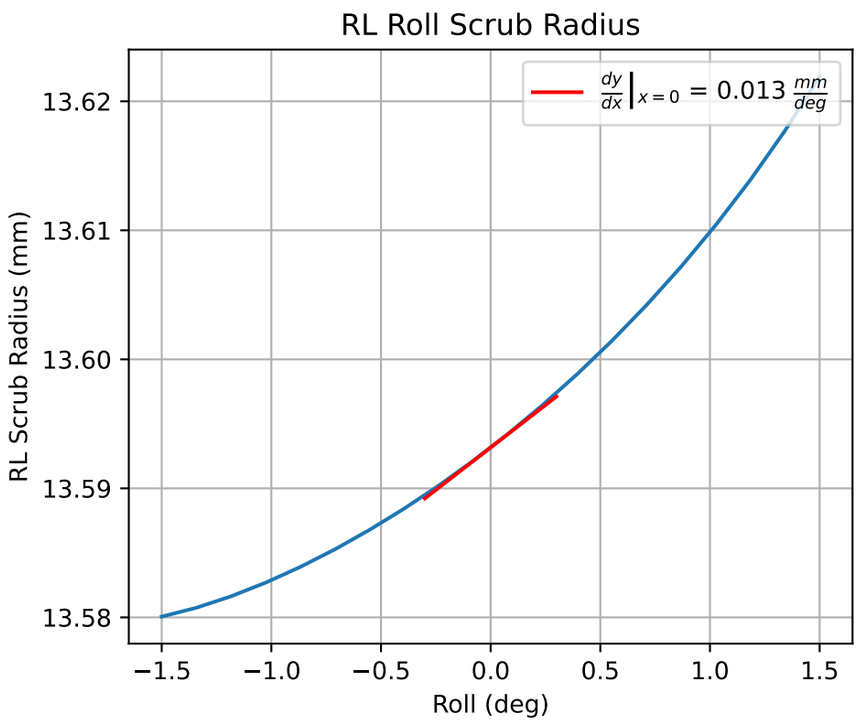
FL	$f(x) = -0.007x + 4.897$
FR	$f(x) = 0.007x + 4.897$
RL	$f(x) = -0.01x + 7.104$
RR	$f(x) = 0.01x + 7.104$

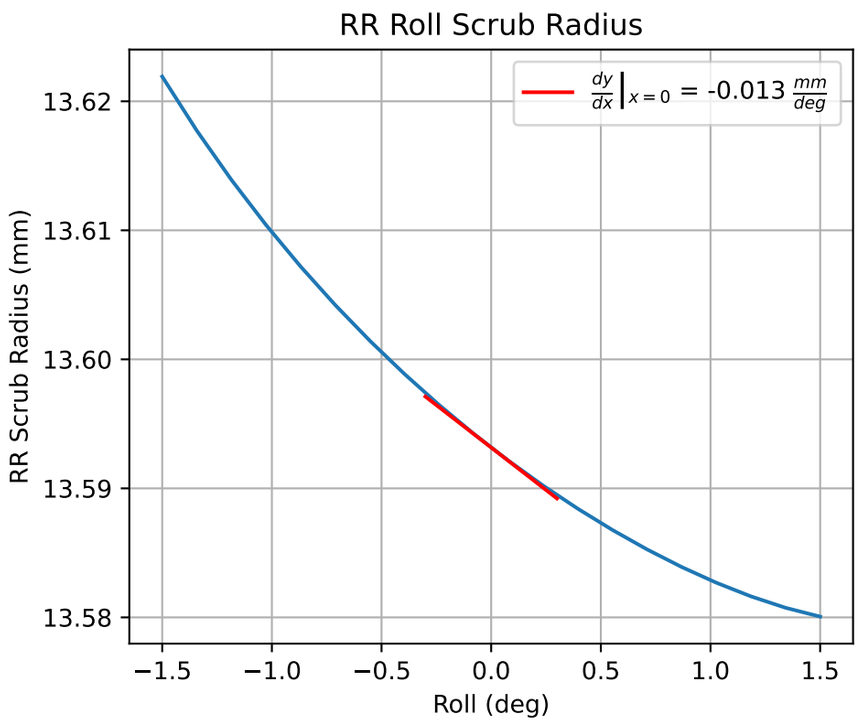
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.02x^2 + -0.007x + 4.897$
FR	$f(x) = -0.0x^3 + 0.02x^2 + 0.007x + 4.897$
RL	$f(x) = -0.0x^3 + 0.002x^2 + -0.01x + 7.104$
RR	$f(x) = 0.0x^3 + 0.002x^2 + 0.01x + 7.104$







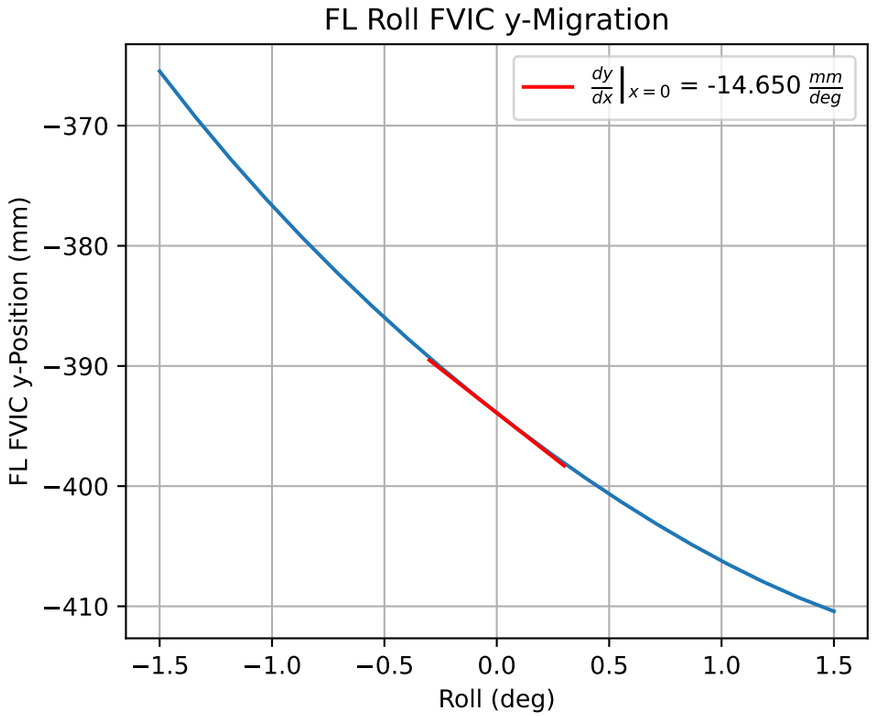


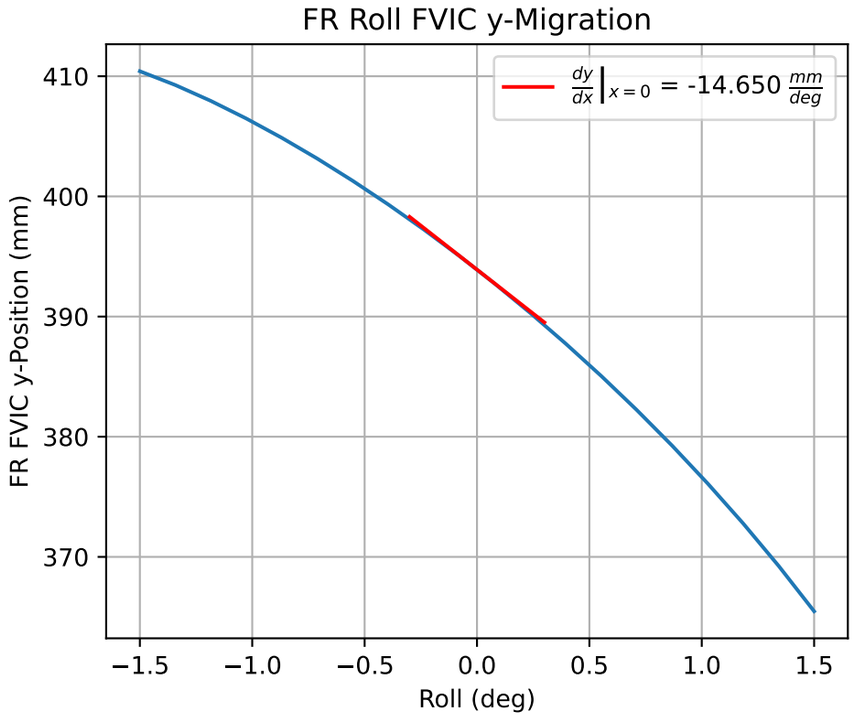
Linear Fit $f(x) = a_1x + a_0$

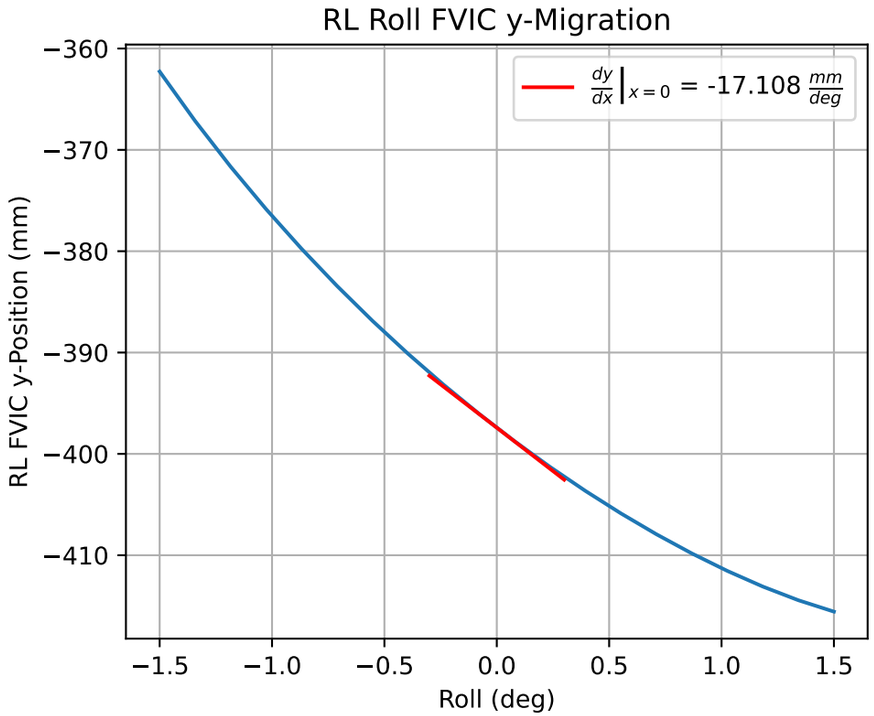
FL	$f(x) = 0.039x + 27.442$
FR	$f(x) = -0.039x + 27.442$
RL	$f(x) = 0.013x + 13.593$
RR	$f(x) = -0.013x + 13.593$

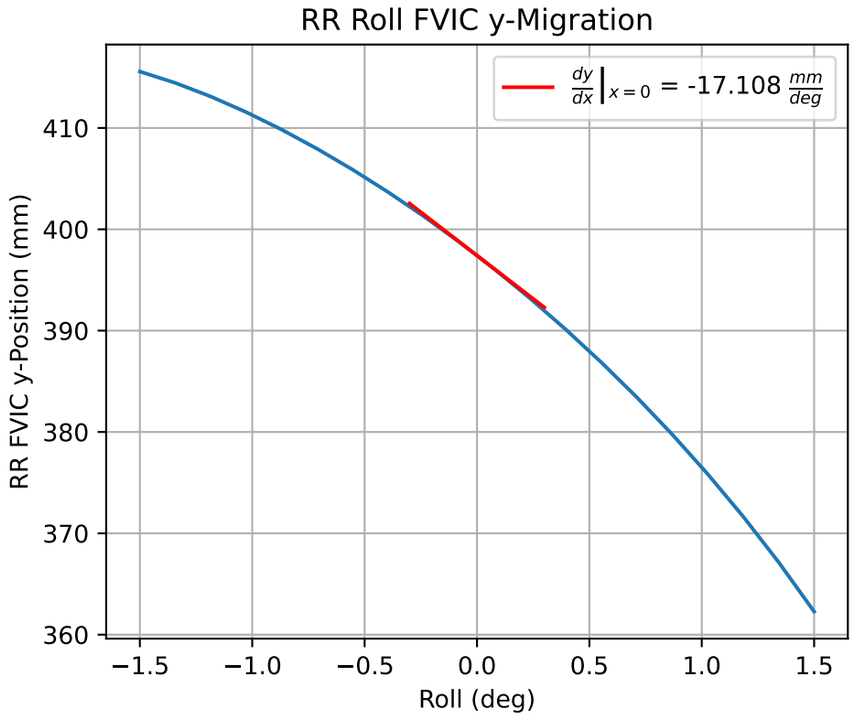
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + 0.011x^2 + 0.039x + 27.442$
FR	$f(x) = -0.0x^3 + 0.011x^2 + -0.039x + 27.442$
RL	$f(x) = 0.0x^3 + 0.003x^2 + 0.013x + 13.593$
RR	$f(x) = -0.0x^3 + 0.003x^2 + -0.013x + 13.593$







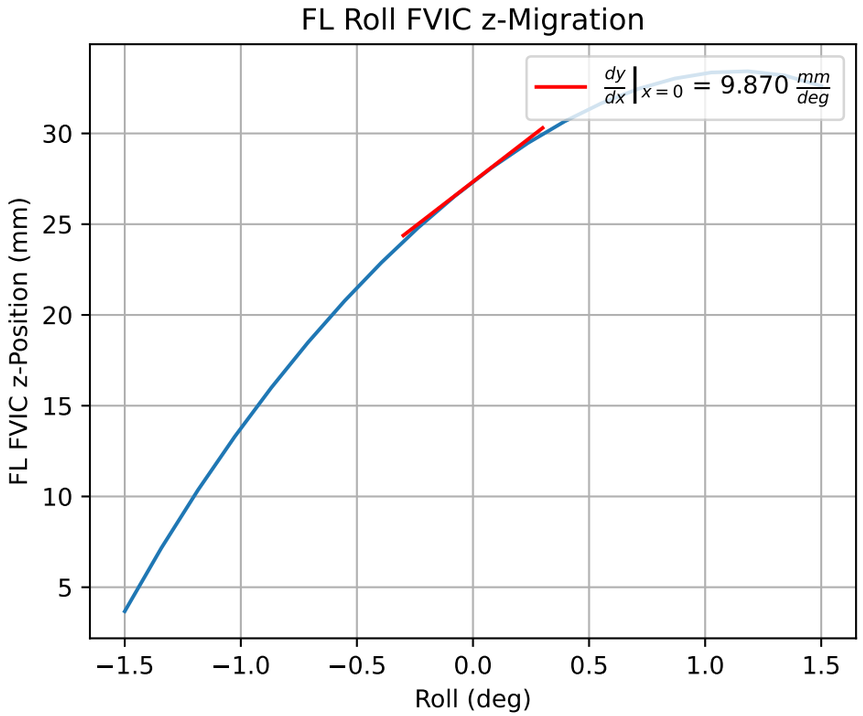


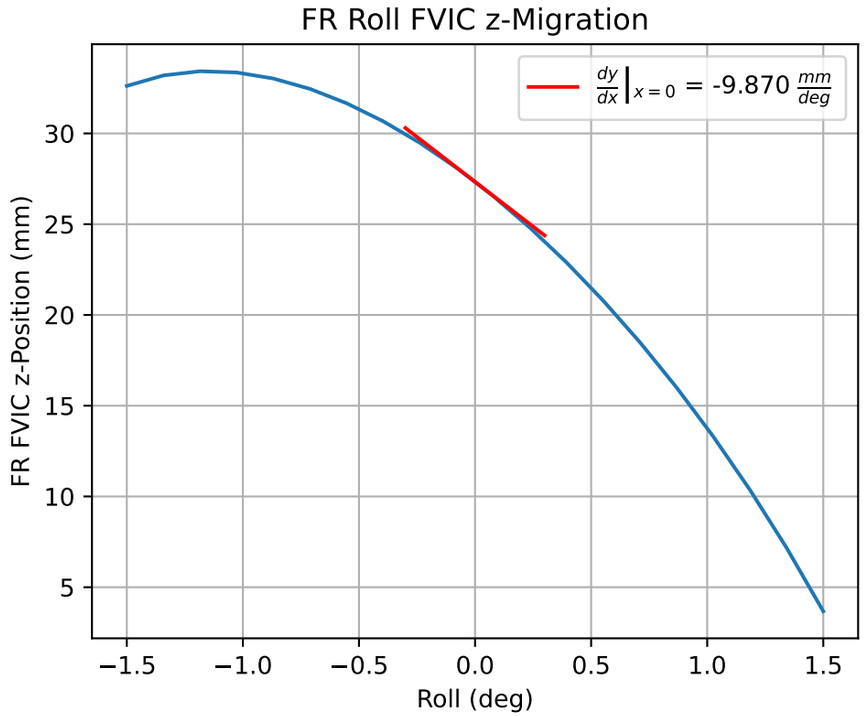
Linear Fit $f(x) = a_1x + a_0$

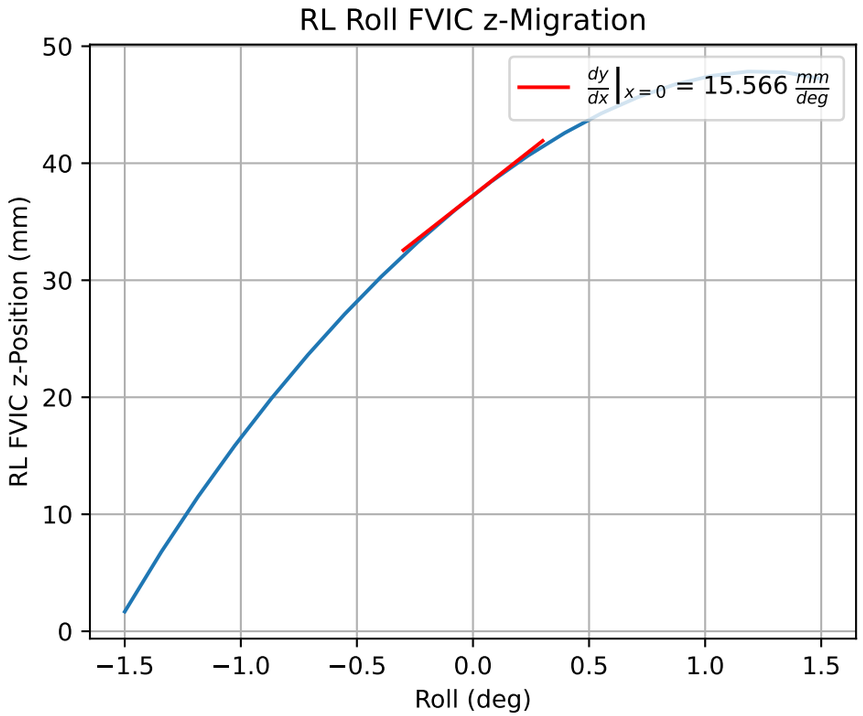
FL	$f(x) = -14.65x + -393.907$
FR	$f(x) = -14.65x + 393.907$
RL	$f(x) = -17.108x + -397.417$
RR	$f(x) = -17.108x + 397.417$

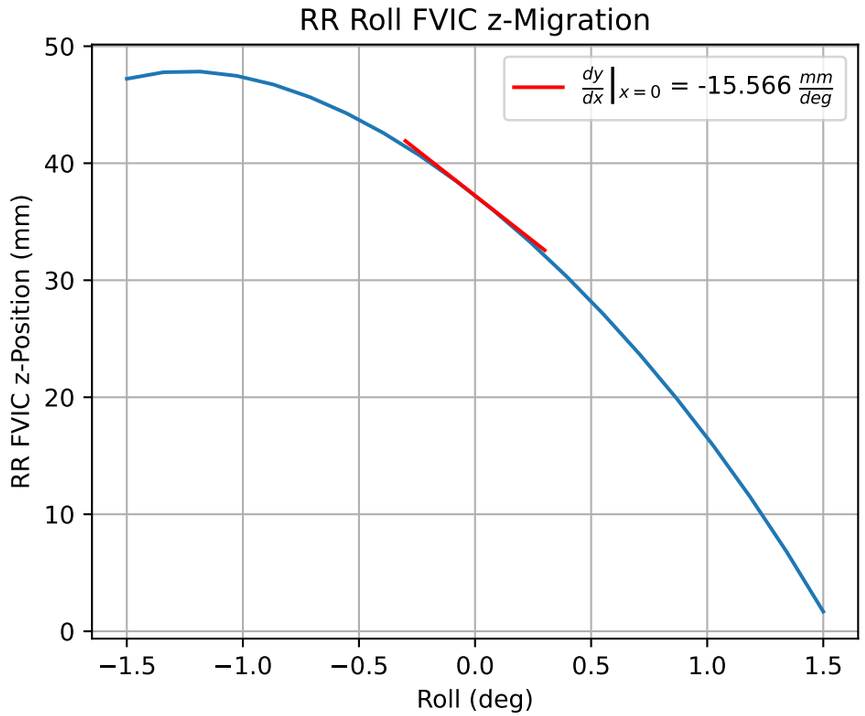
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.151x^3 + 2.627x^2 + -14.639x + -393.977$
FR	$f(x) = -0.151x^3 + -2.627x^2 + -14.639x + 393.977$
RL	$f(x) = -0.299x^3 + 3.742x^2 + -17.085x + -397.519$
RR	$f(x) = -0.299x^3 + -3.742x^2 + -17.085x + 397.519$







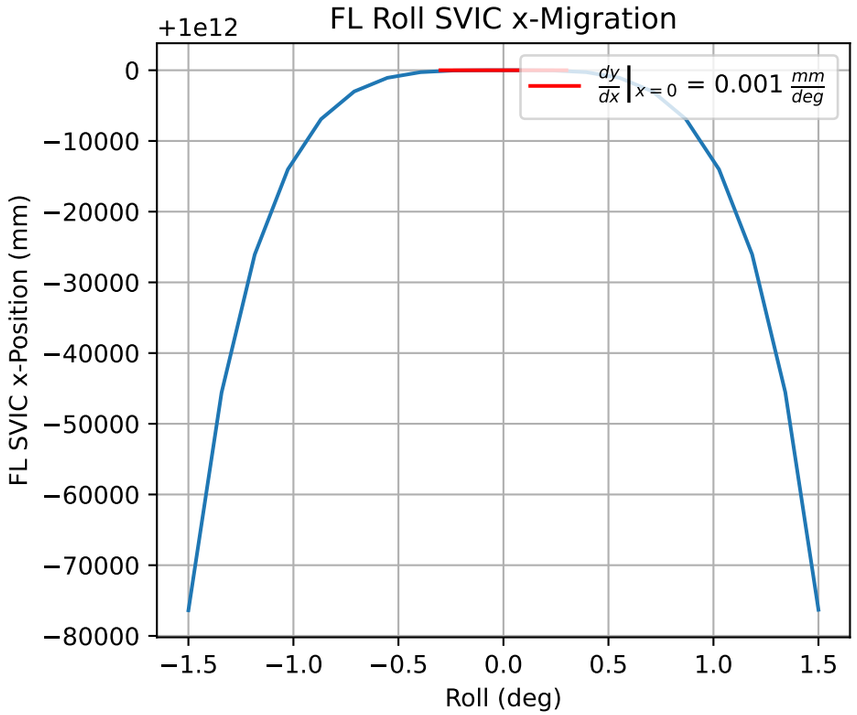


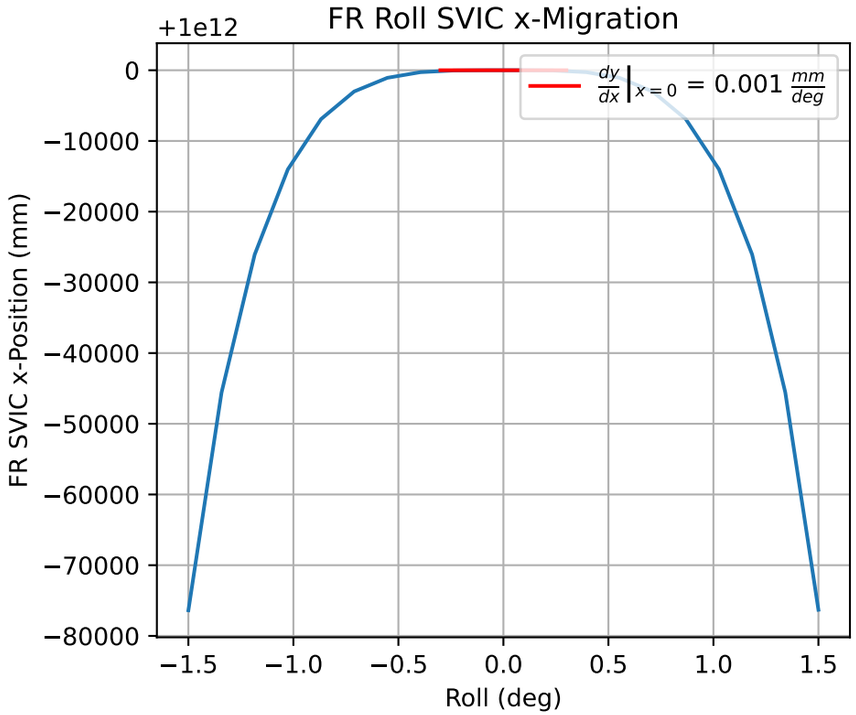
Linear Fit $f(x) = a_1x + a_0$

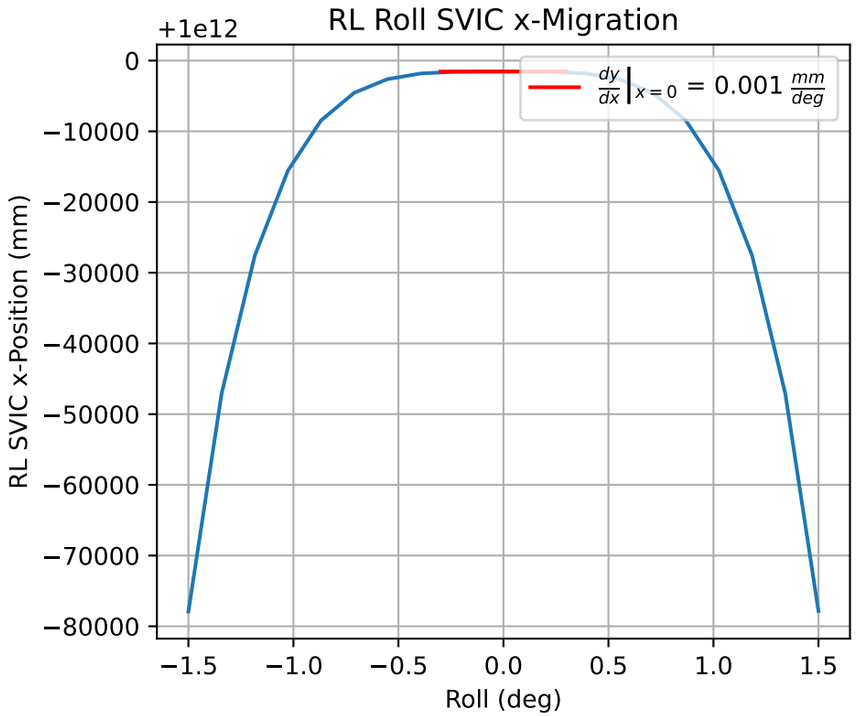
FL	$f(x) = 9.87x + 27.34$
FR	$f(x) = -9.87x + 27.34$
RL	$f(x) = 15.566x + 37.239$
RR	$f(x) = -15.566x + 37.239$

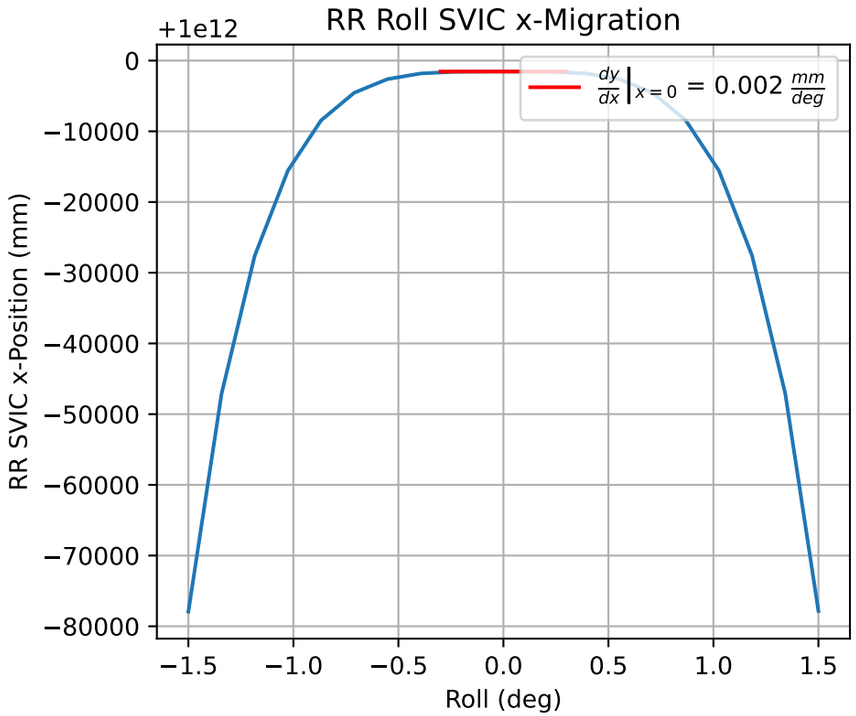
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -0.102x^3 + -4.049x^2 + 9.879x + 27.453$
FR	$f(x) = 0.102x^3 + -4.049x^2 + -9.879x + 27.453$
RL	$f(x) = -0.177x^3 + -5.631x^2 + 15.581x + 37.399$
RR	$f(x) = 0.177x^3 + -5.631x^2 + -15.581x + 37.399$







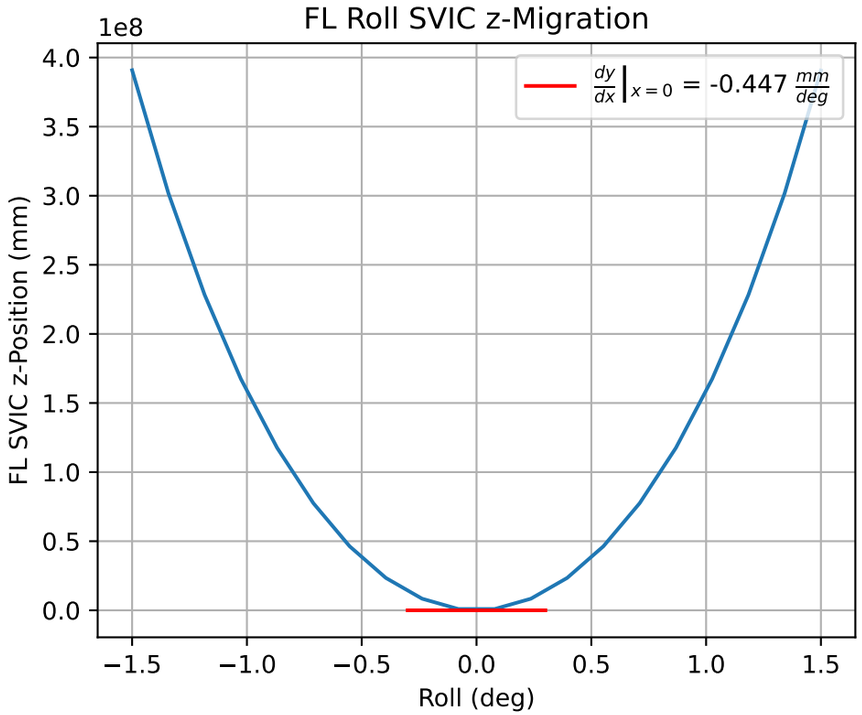


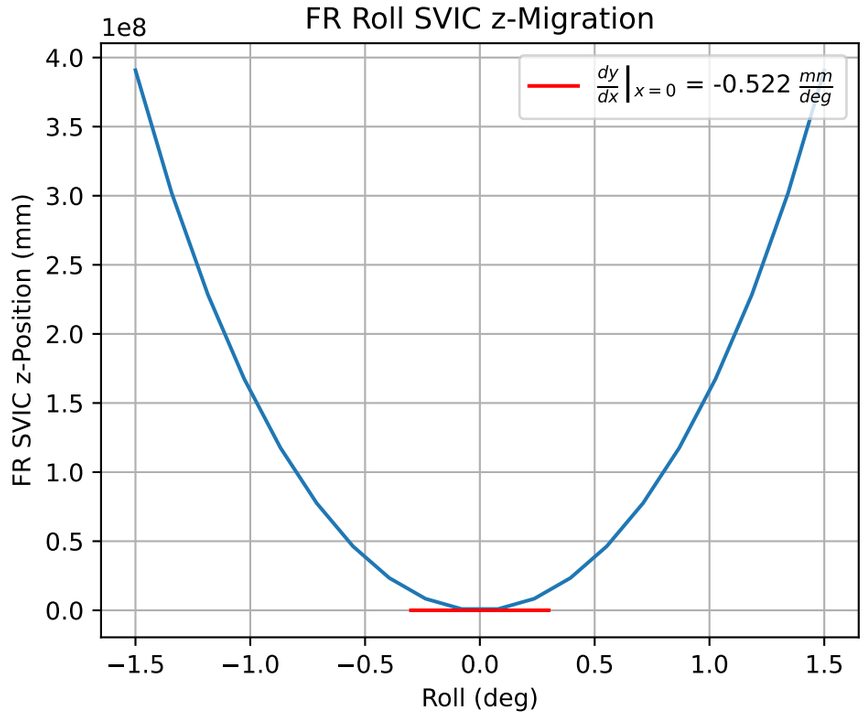
Linear Fit $f(x) = a_1x + a_0$

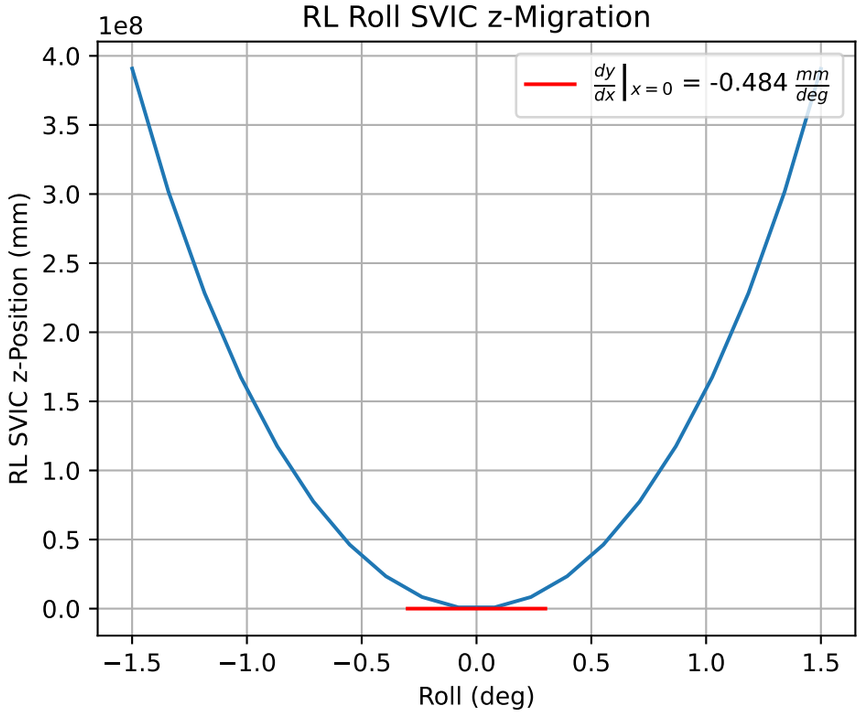
FL	$f(x) = 0.001x + 1.000e+12$
FR	$f(x) = 0.001x + 1.000e+12$
RL	$f(x) = 0.001x + 1.000e+12$
RR	$f(x) = 0.002x + 1.000e+12$

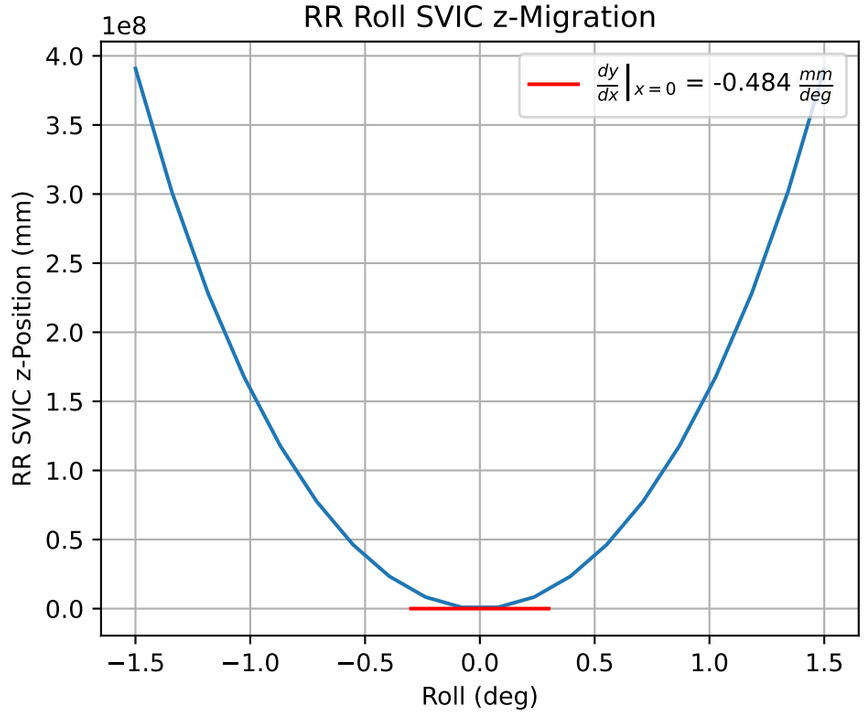
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 12.858x^3 + -30904.774x^2 + -8.097x + 1.0e+1$
FR	$f(x) = 12.858x^3 + -30904.774x^2 + -8.097x + 1.0e+1$
RL	$f(x) = 12.86x^3 + -30904.78x^2 + -8.097x + 1.0e+12$
RR	$f(x) = 12.856x^3 + -30904.78x^2 + -8.096x + 1.0e+1$







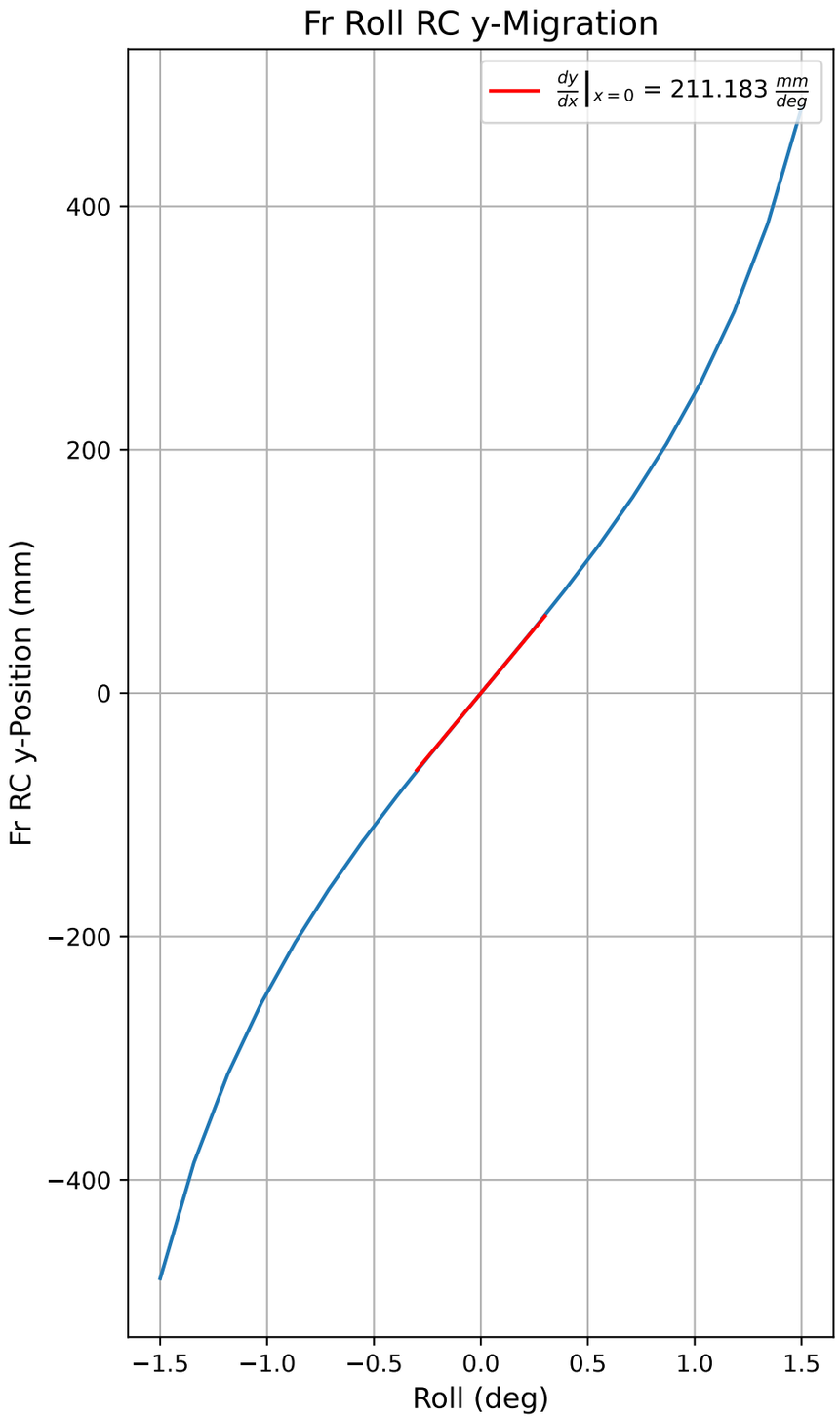


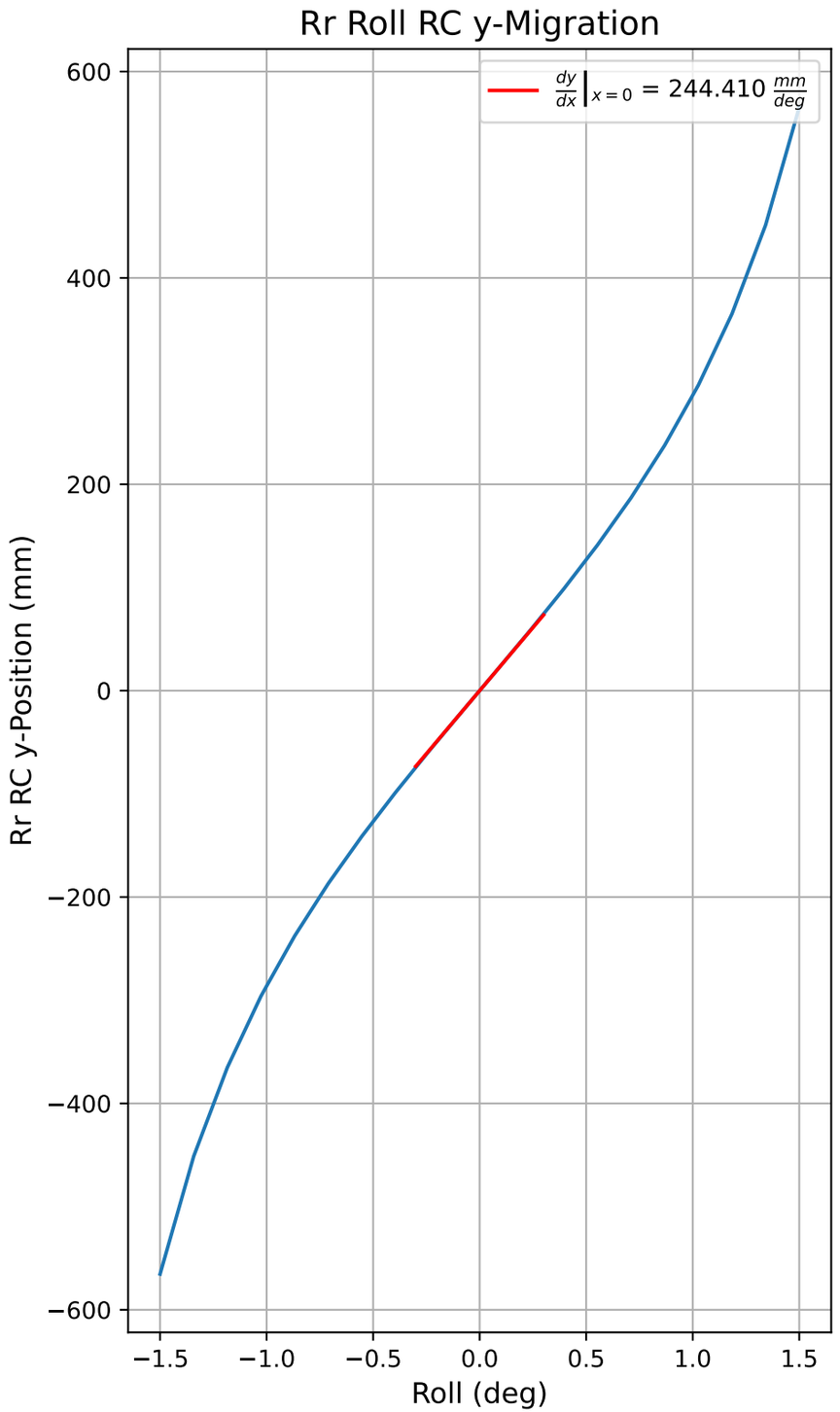
Linear Fit $f(x) = a_1x + a_0$

FL	$f(x) = -0.447x + -118.161$
FR	$f(x) = -0.522x + -118.161$
RL	$f(x) = -0.484x + -118.13$
RR	$f(x) = -0.484x + -118.13$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = -29173.839x^3 + 171559310.923x^2 + 7834.007x + -6.$
FR	$f(x) = -29173.846x^3 + 171559310.923x^2 + 7833.933x + -6.$
RL	$f(x) = -29173.838x^3 + 171559310.929x^2 + 7833.97x + -6.0$
RR	$f(x) = -29173.847x^3 + 171559310.929x^2 + 7833.97x + -6.0$



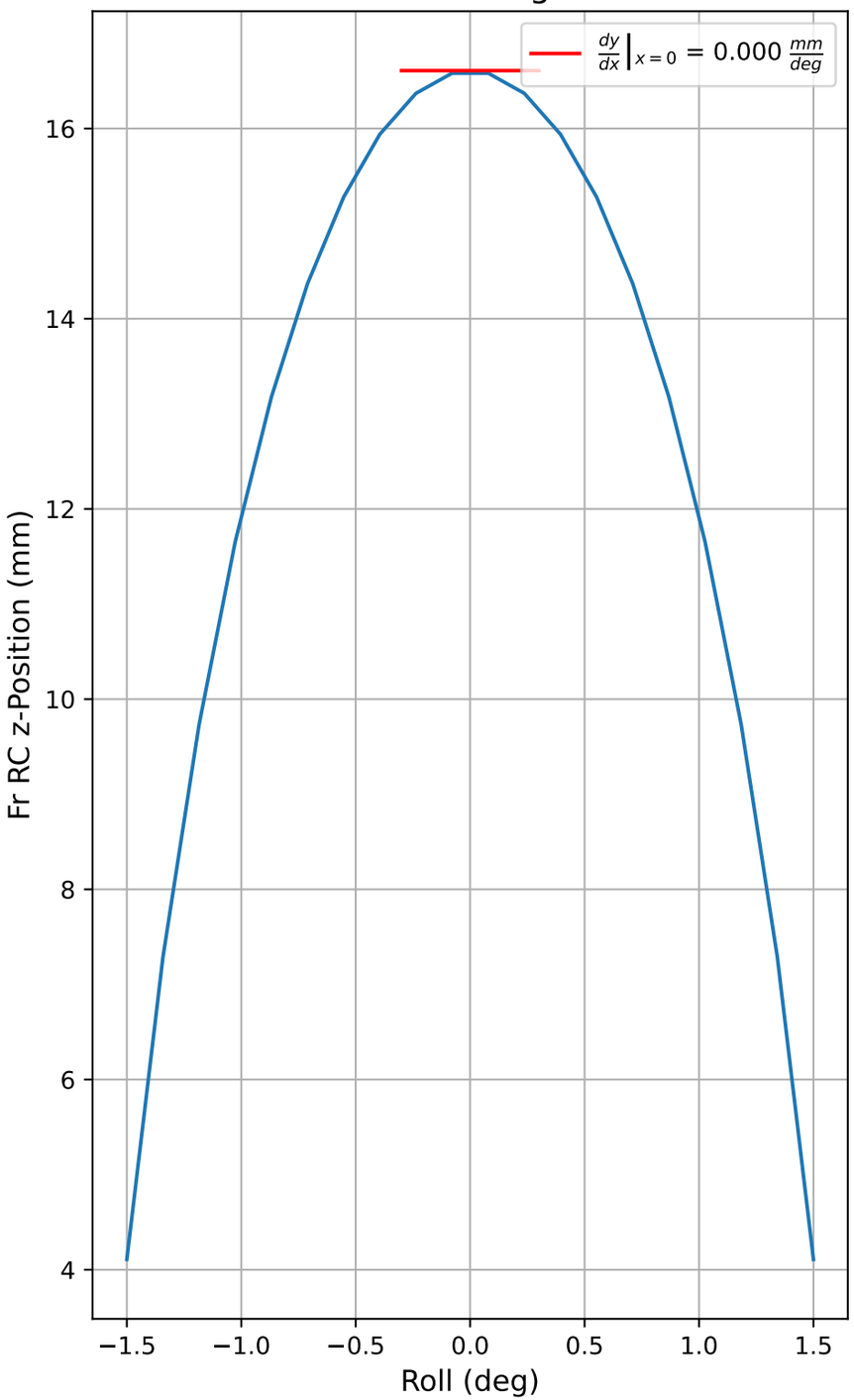


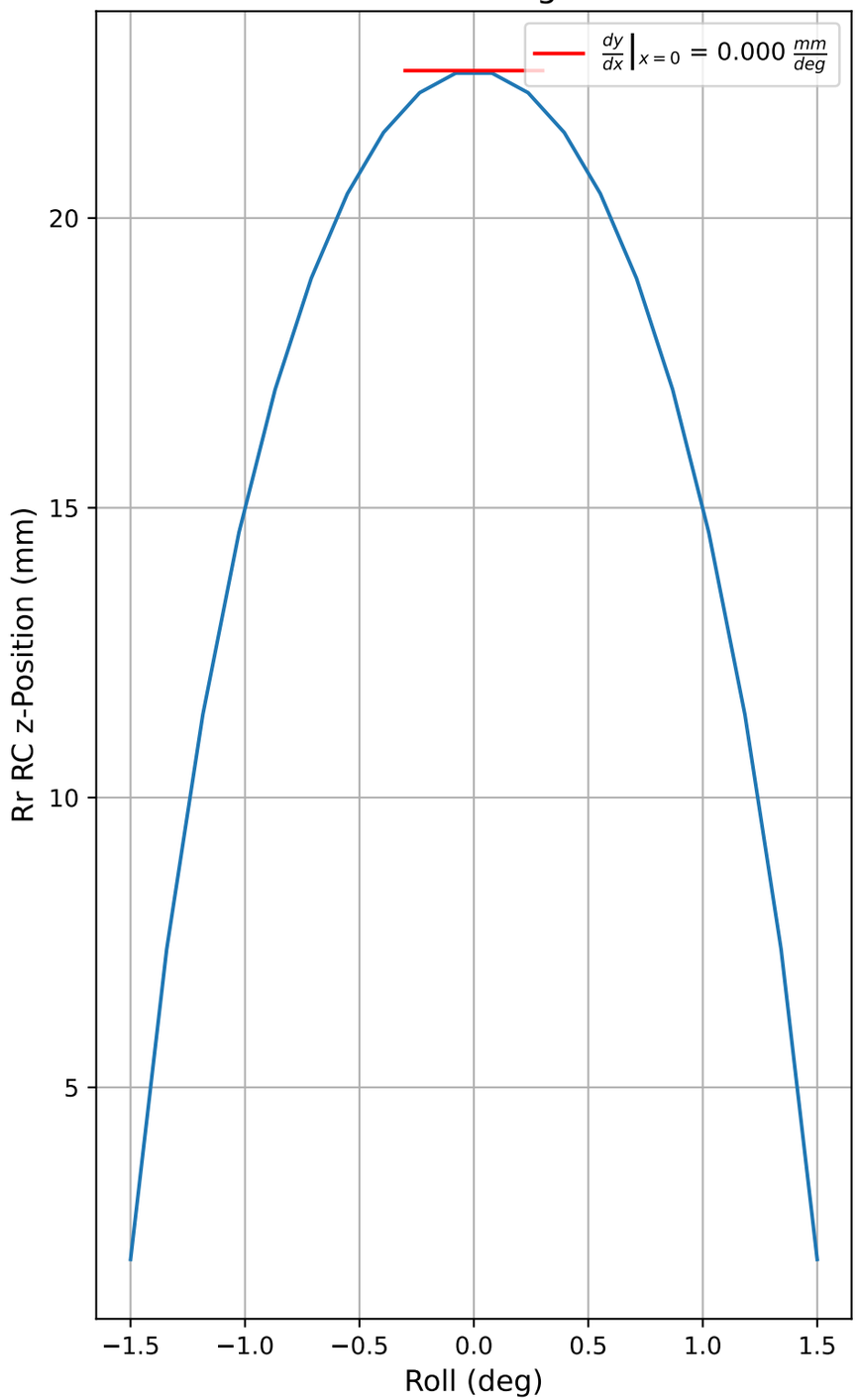
Linear Fit $f(x) = a_1x + a_0$

Fr	$f(x) = 211.183x + 0.0$
Rr	$f(x) = 244.41x + 0.0$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

Fr	$f(x) = 53.311x^3 + 0.0x^2 + 195.565x + -0.0$
Rr	$f(x) = 64.641x^3 + -0.0x^2 + 224.924x + 0.0$



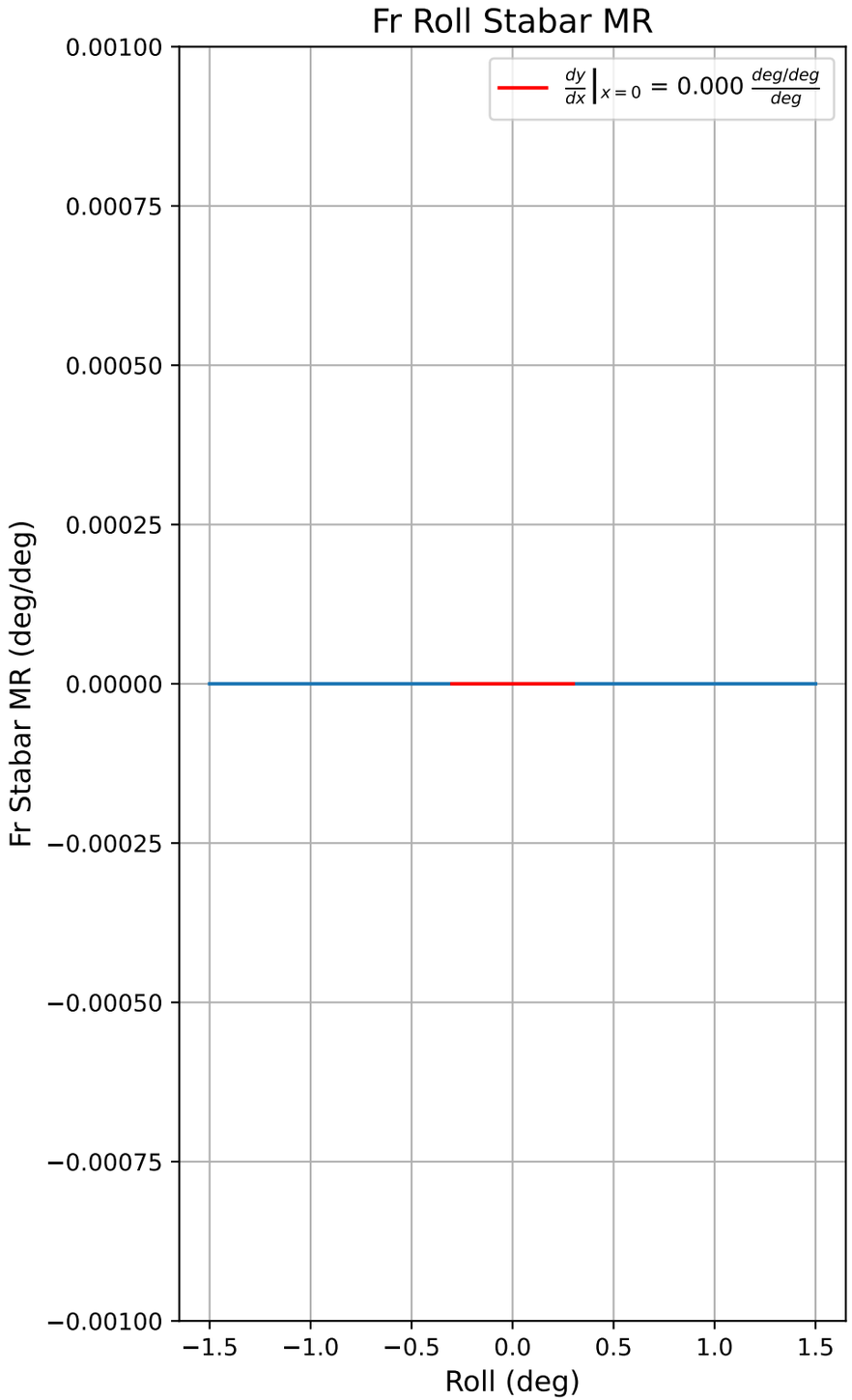


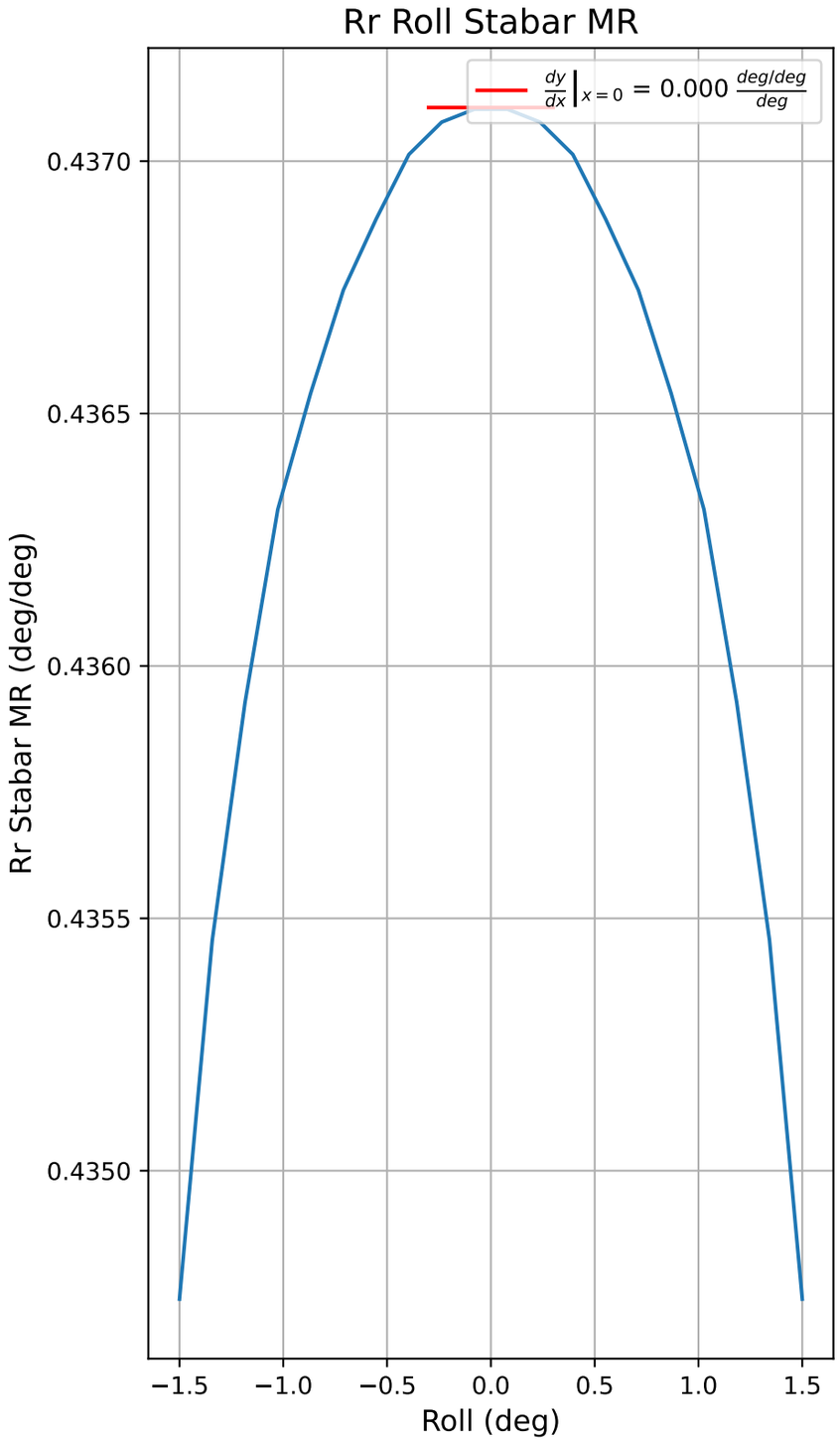
Linear Fit $f(x) = a_1x + a_0$

Fr	$f(x) = 0.0x + 16.608$
Rr	$f(x) = 0.0x + 22.543$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

Fr	$f(x) = -0.0x^3 + -5.415x^2 + 0.0x + 16.938$
Rr	$f(x) = 0.0x^3 + -8.856x^2 + -0.0x + 23.139$



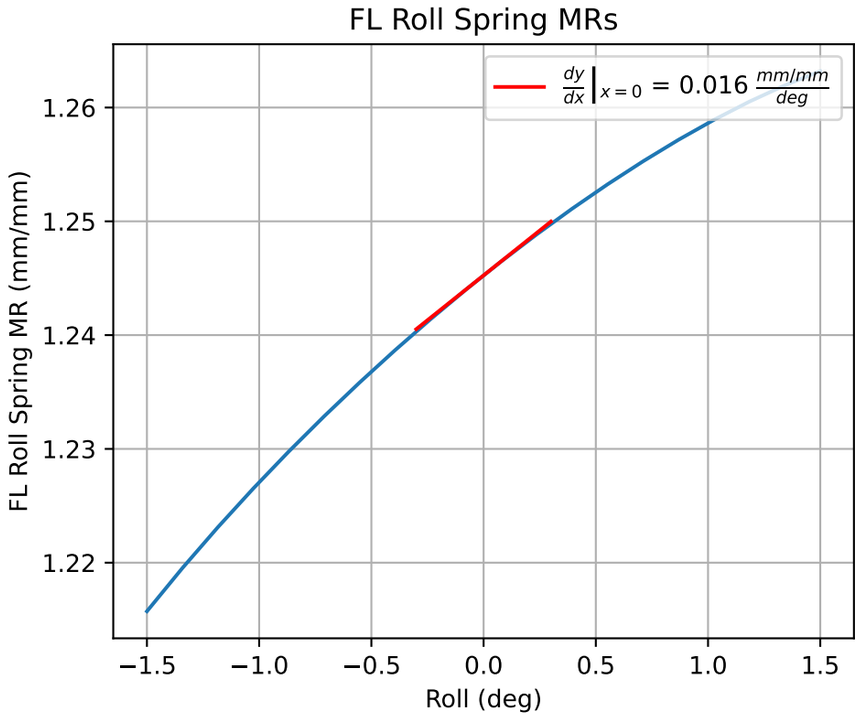


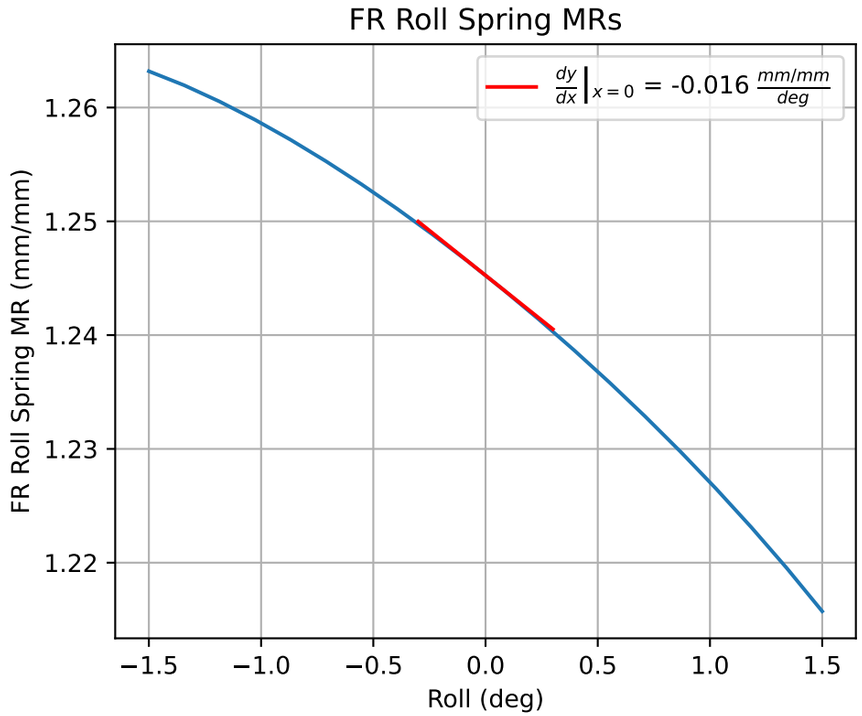
Linear Fit $f(x) = a_1x + a_0$

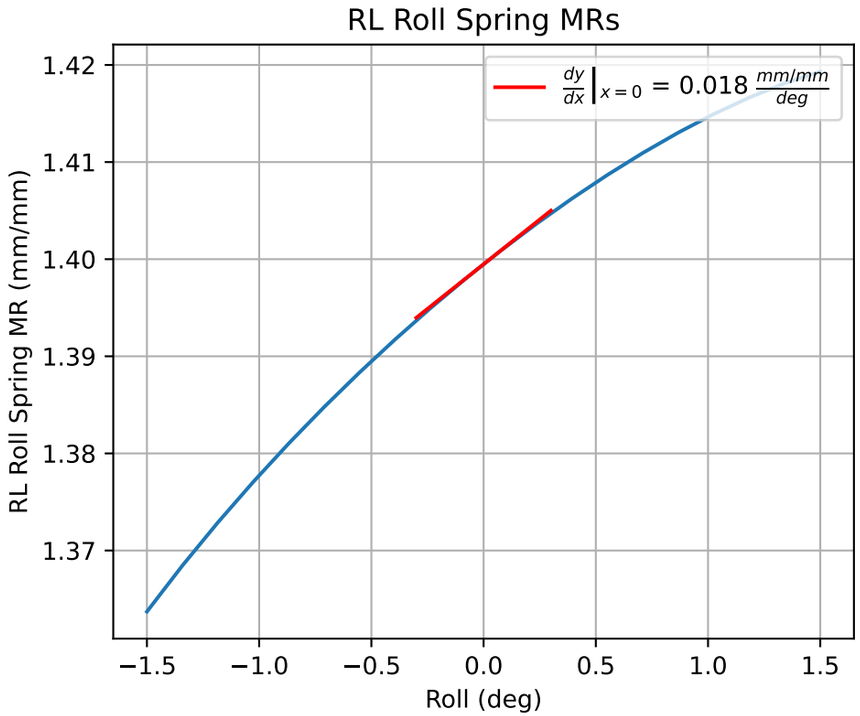
Fr	$f(x) = 0.0x + 0.0$
Rr	$f(x) = 0.0x + 0.437$

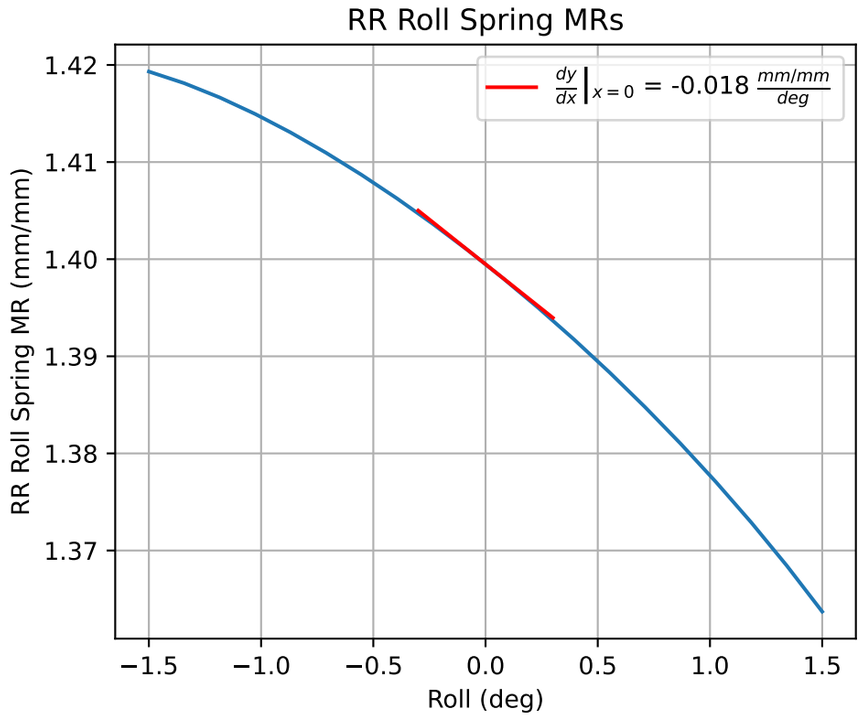
Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

Fr	$f(x) = 0.0x^3 + 0.0x^2 + 0.0x + 0.0$
Rr	$f(x) = 0.0x^3 + -0.001x^2 + -0.0x + 0.437$









Linear Fit $f(x) = a_1x + a_0$

FL	$f(x) = 0.016x + 1.245$
FR	$f(x) = -0.016x + 1.245$
RL	$f(x) = 0.018x + 1.399$
RR	$f(x) = -0.018x + 1.399$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$

FL	$f(x) = 0.0x^3 + -0.003x^2 + 0.016x + 1.245$
FR	$f(x) = -0.0x^3 + -0.003x^2 + -0.016x + 1.245$
RL	$f(x) = 0.0x^3 + -0.004x^2 + 0.018x + 1.4$
RR	$f(x) = -0.0x^3 + -0.004x^2 + -0.018x + 1.4$