



Kinematics Report

Simulation Author: Robert Horvath

Generated By: Unknown (Unknown)

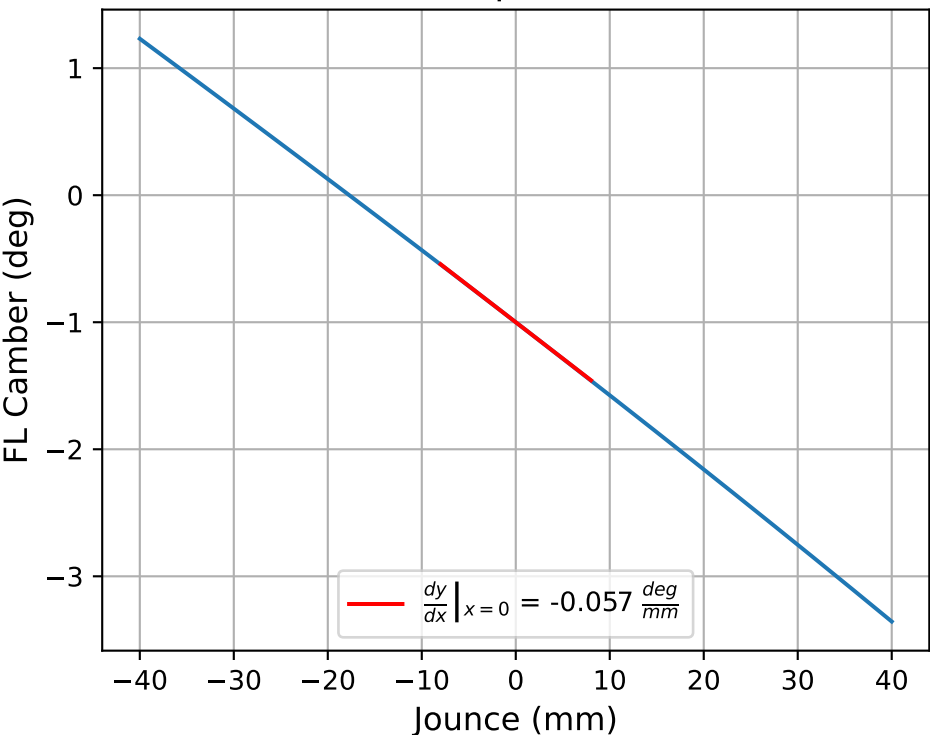
Date: 2025-11-09, 05:21 PM UTC

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

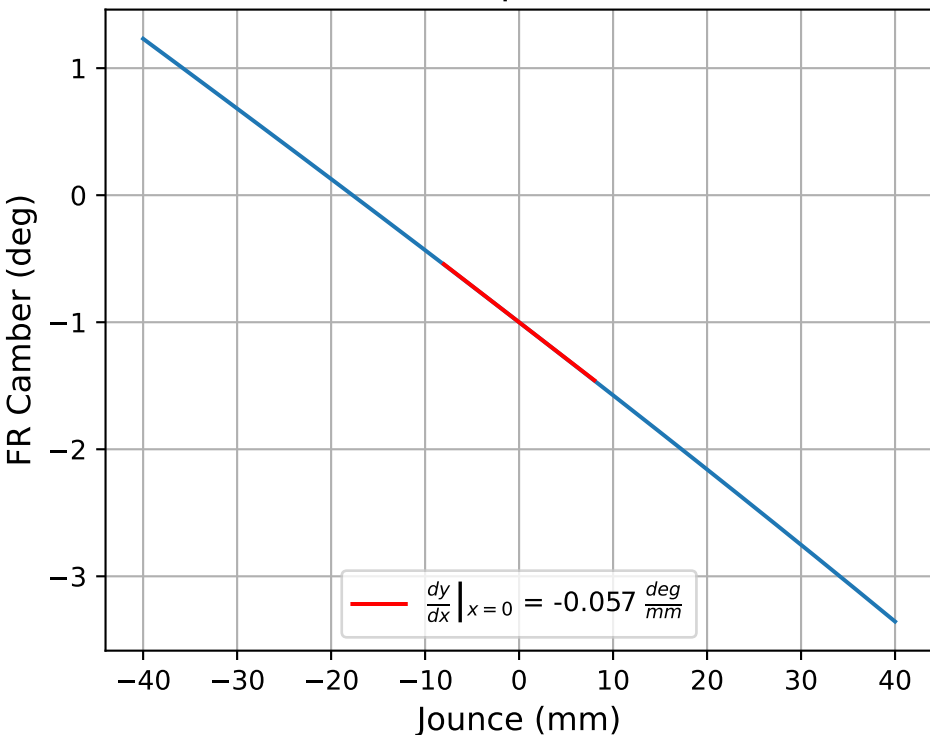
Note 2: Cubic fits are performed over the entire visible domain (fits over the entire range)



FL Bump Camber



FR Bump Camber

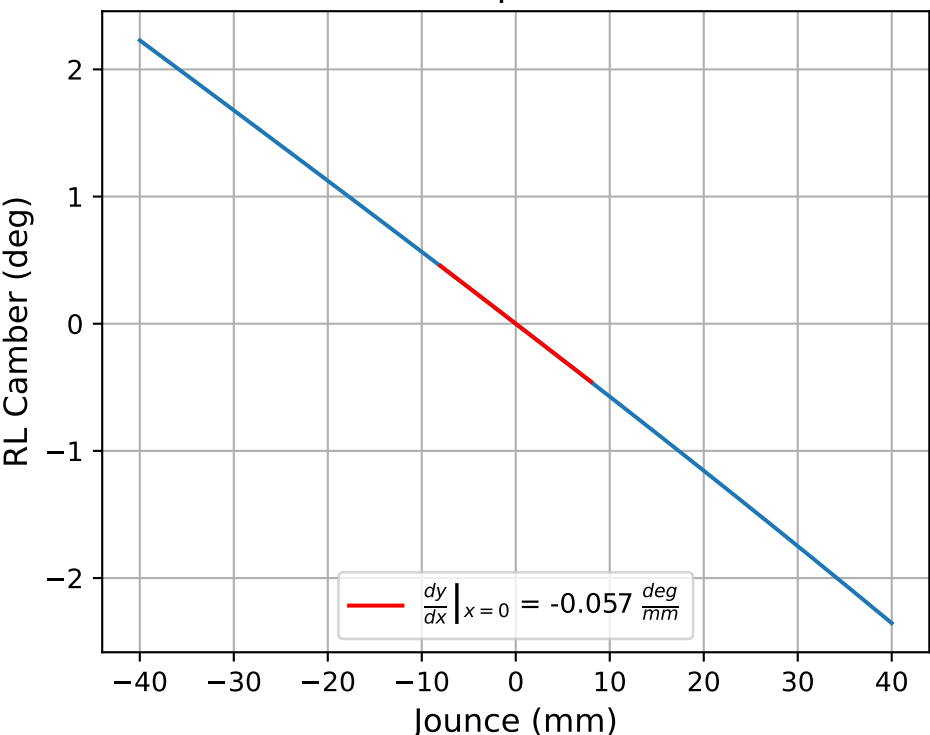


Linear Fit

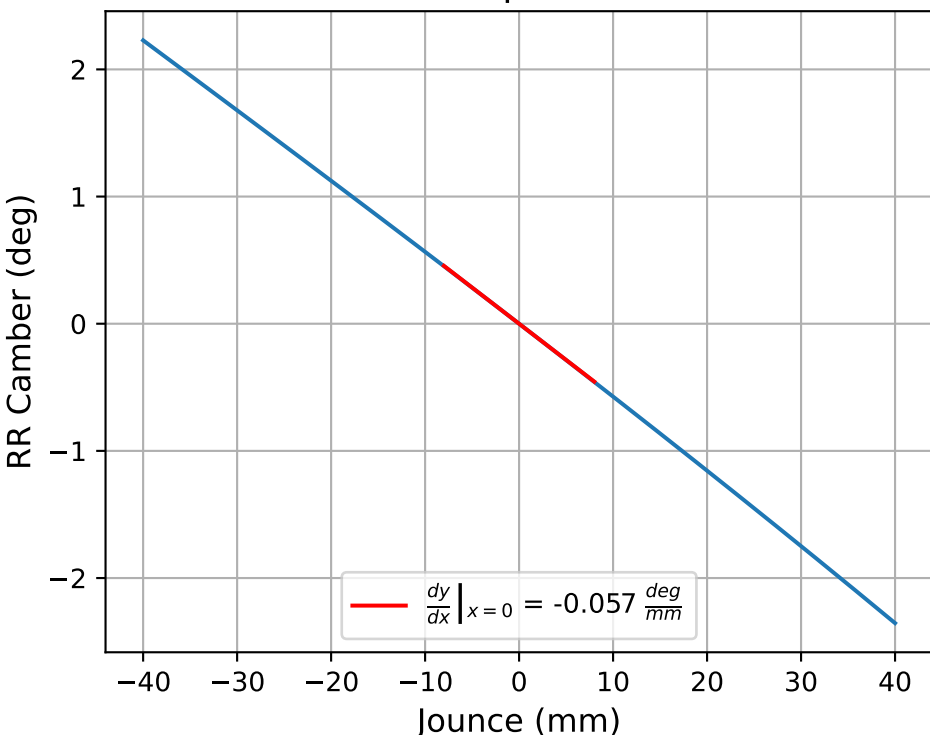
$$f(x) = a_1x + a_0$$

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

RL Bump Camber



RR Bump Camber

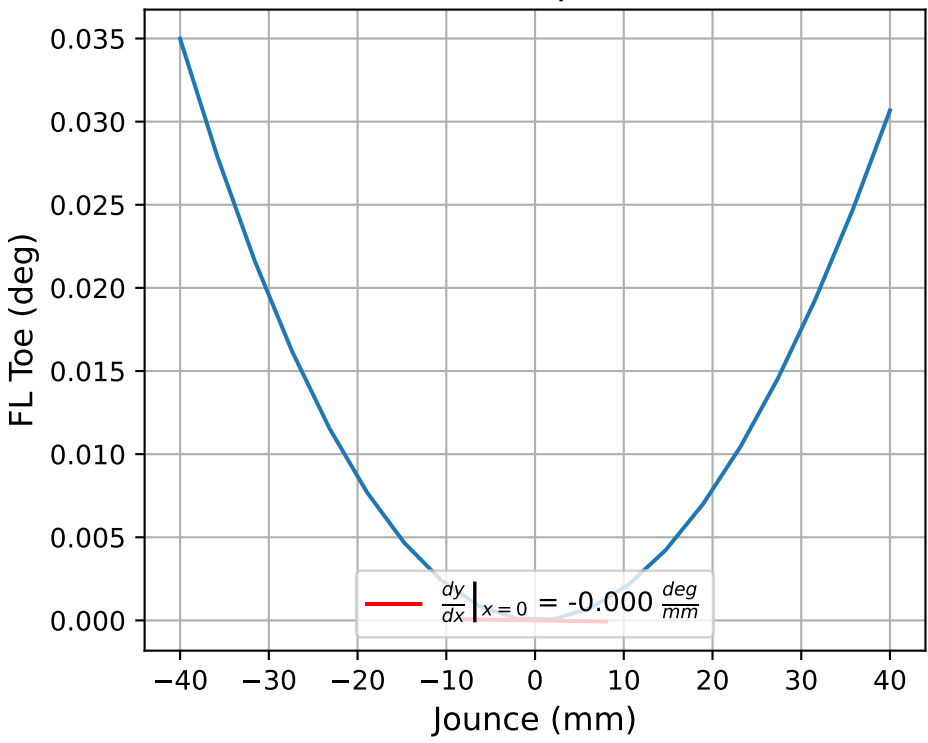


Cubic Fit

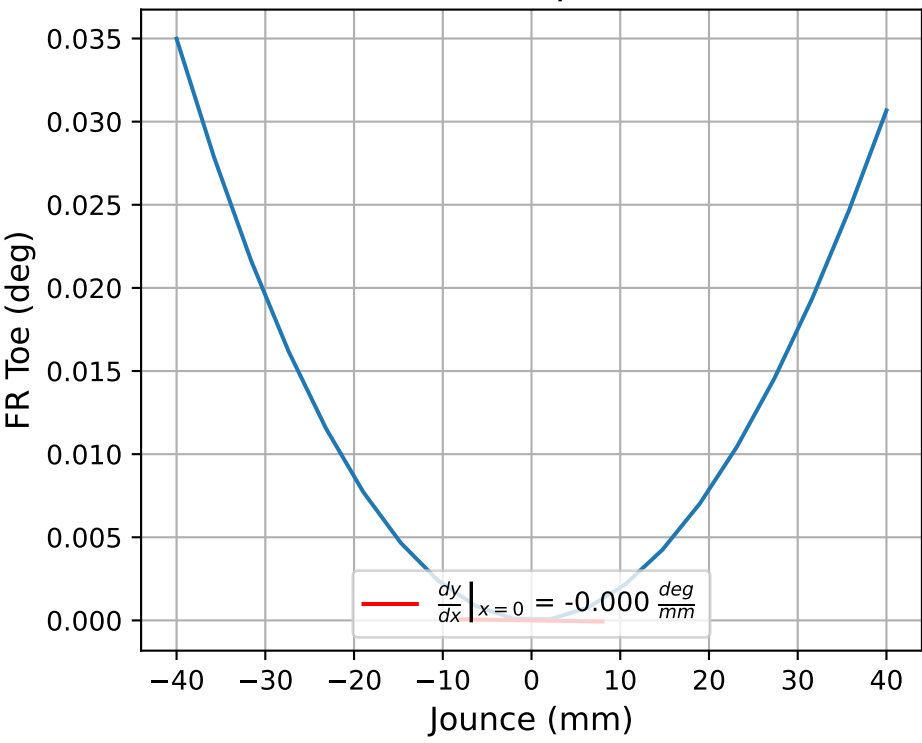
$$f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$$

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	$f(x) = -0.0x^3 + -0.0x^2 + -0.057x + 0.0$

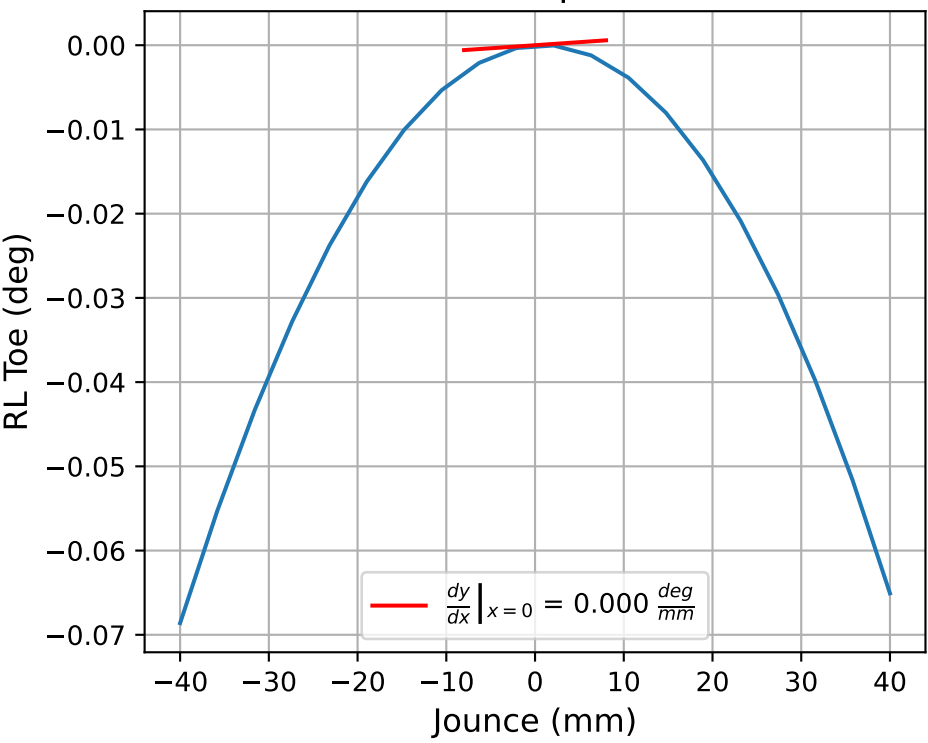
FL Bump Toe



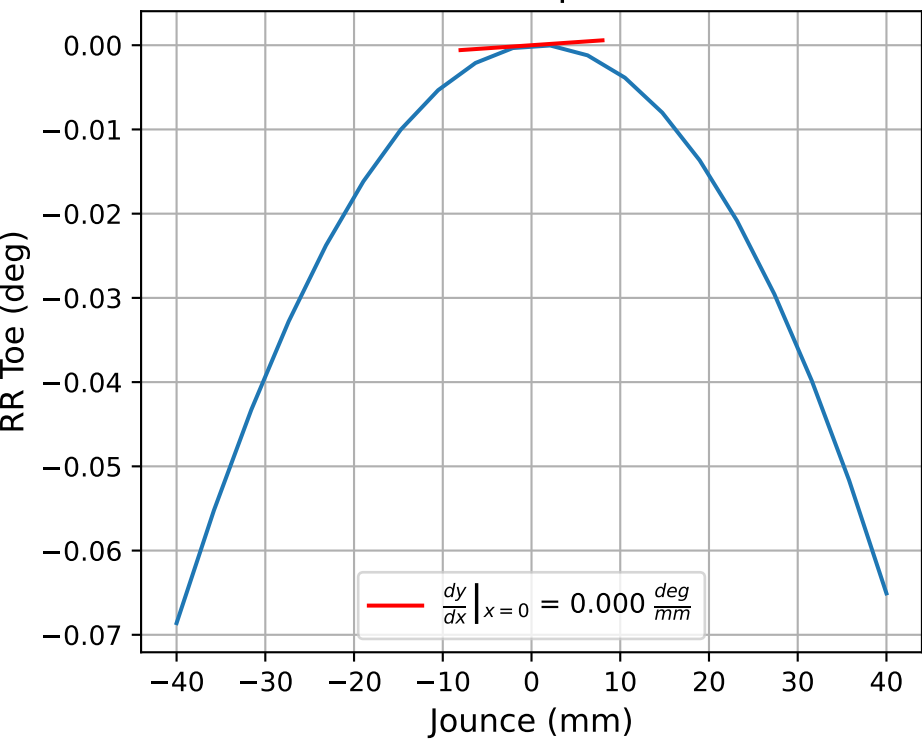
FR Bump Toe



RL Bump Toe



RR Bump Toe



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	$f(x) = 0.0x + 0.0$

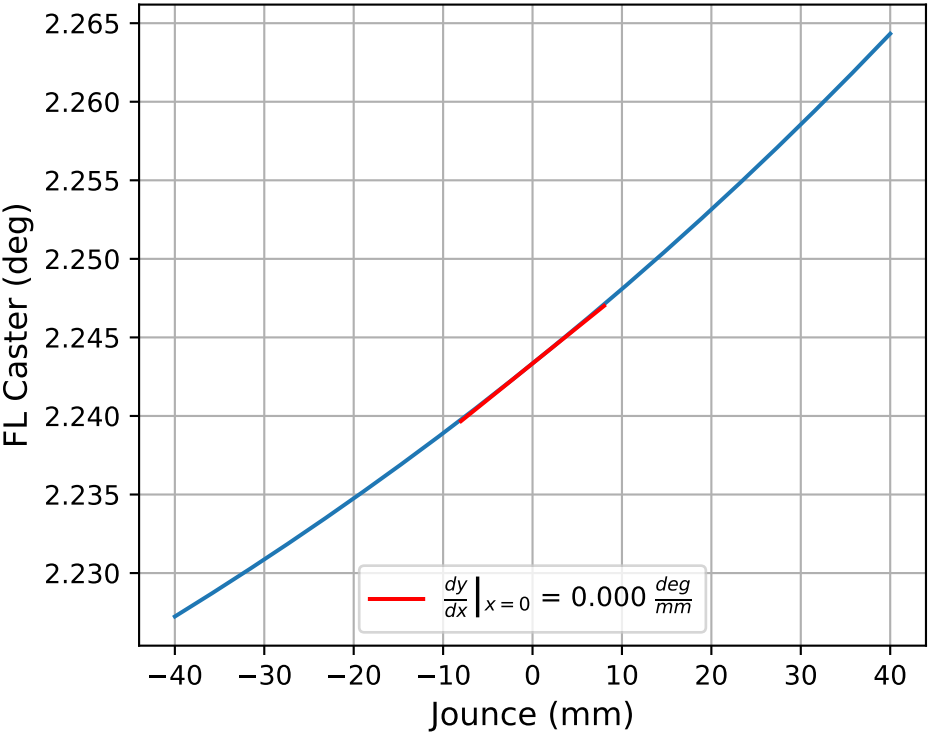
Cubic Fit

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

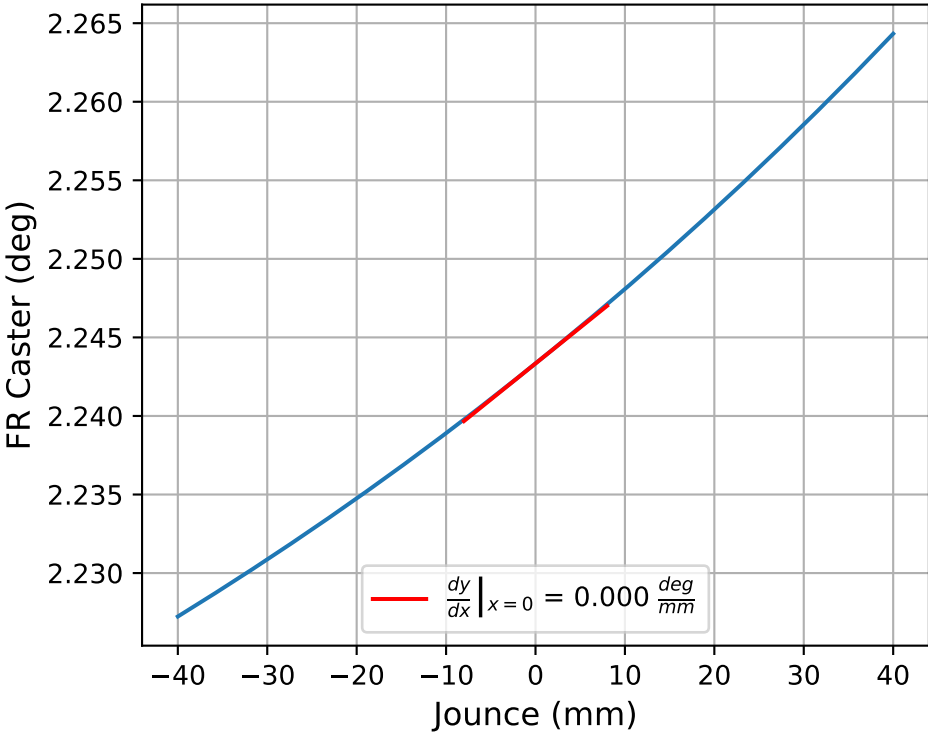
FL	$f(x) = -0.0x^3 + 0.0x^2 + -0.0x + -0.0$
FR	$f(x) = -0.0x^3 + 0.0x^2 + -0.0x + -0.0$
RL	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 0.0$
RR	$f(x) = -0.0x^3 + -0.0x^2 + 0.0x + 0.0$



FL Bump Caster



FR Bump Caster

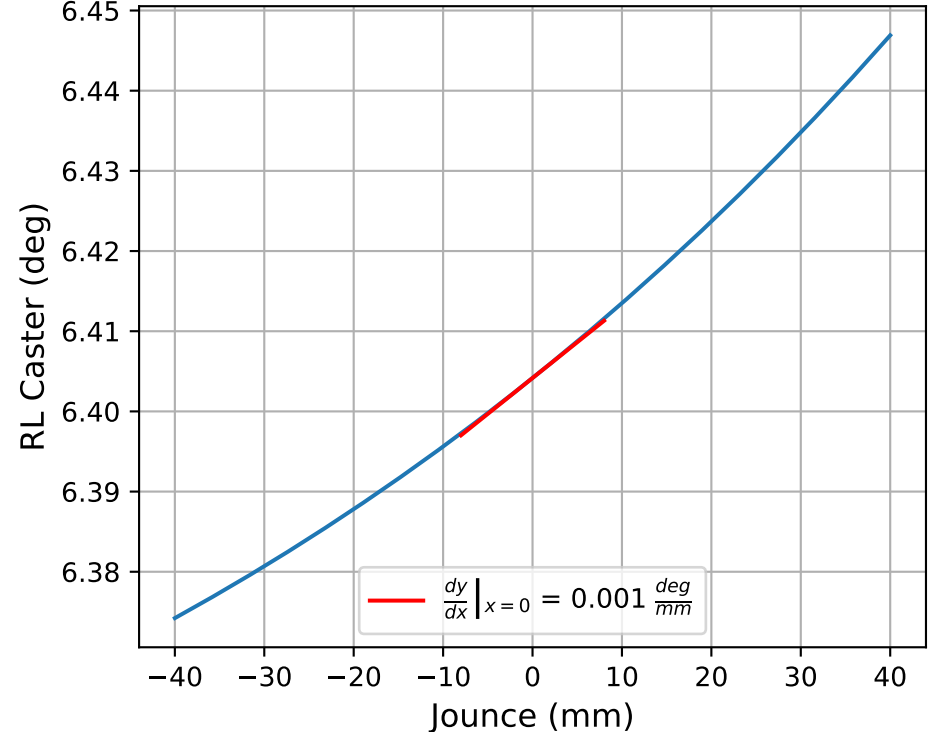


Linear Fit

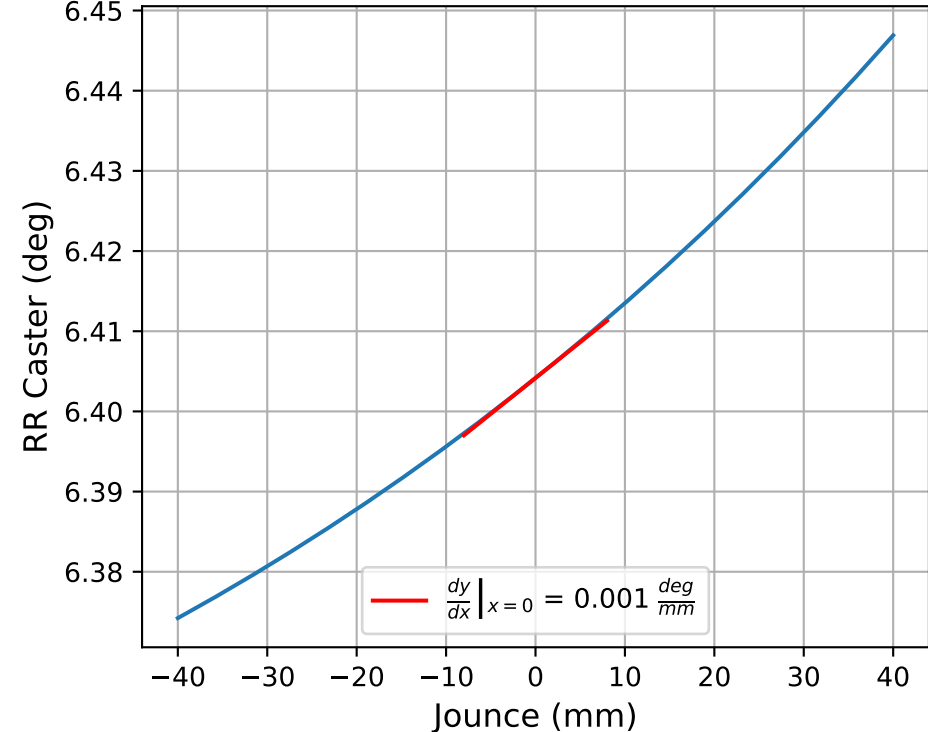
$$f(x) = a_1x + a_0$$

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

RL Bump Caster



RR Bump Caster



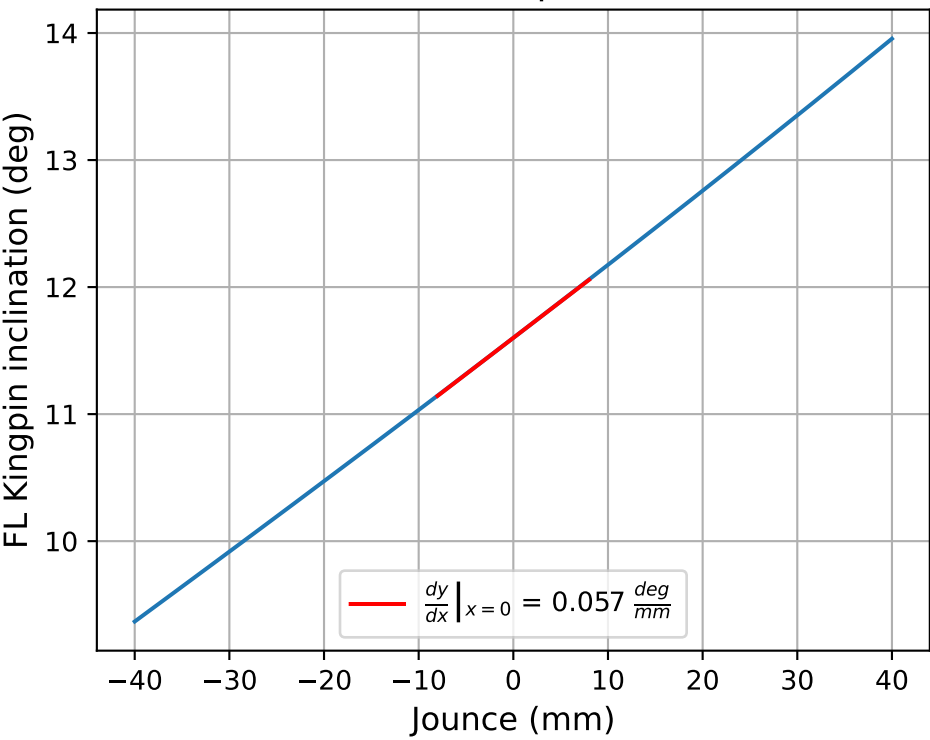
Cubic Fit

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

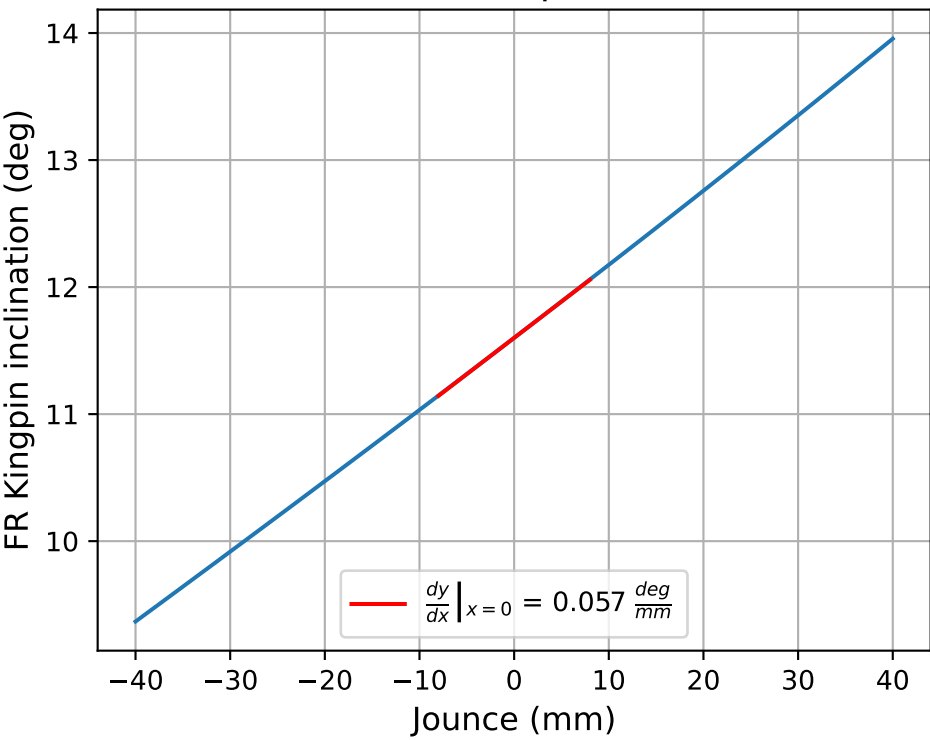
FL	$f(x) = 0.0x^3 + 0.0x^2 + 0.0x + 2.243$
FR	$f(x) = 0.0x^3 + 0.0x^2 + 0.0x + 2.243$
RL	$f(x) = 0.0x^3 + 0.0x^2 + 0.001x + 6.404$
RR	$f(x) = 0.0x^3 + 0.0x^2 + 0.001x + 6.404$



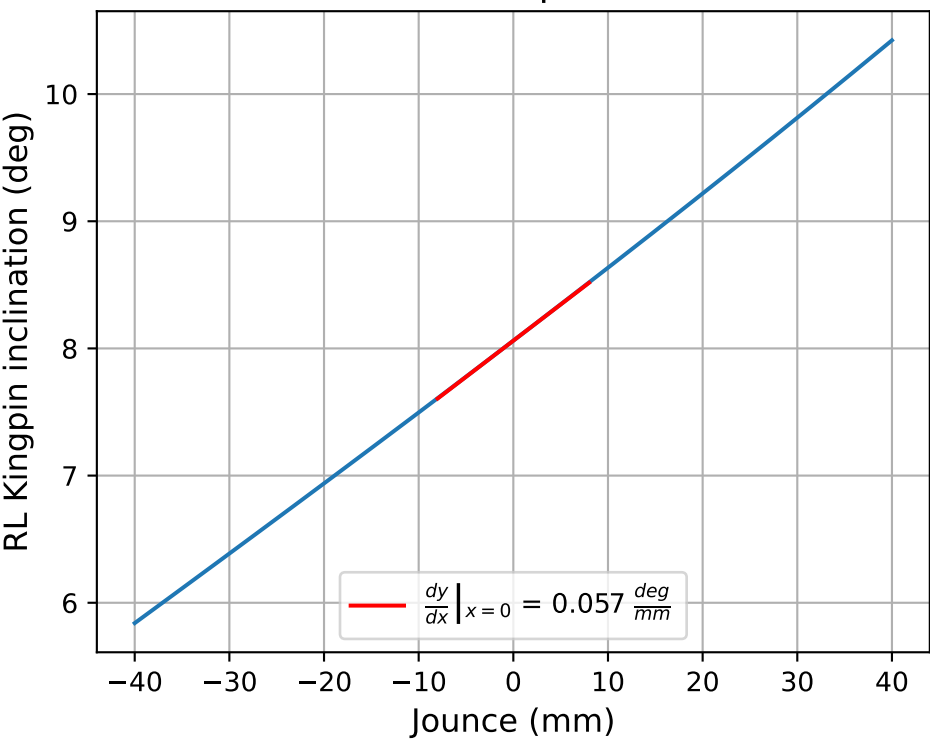
FL Bump KPI



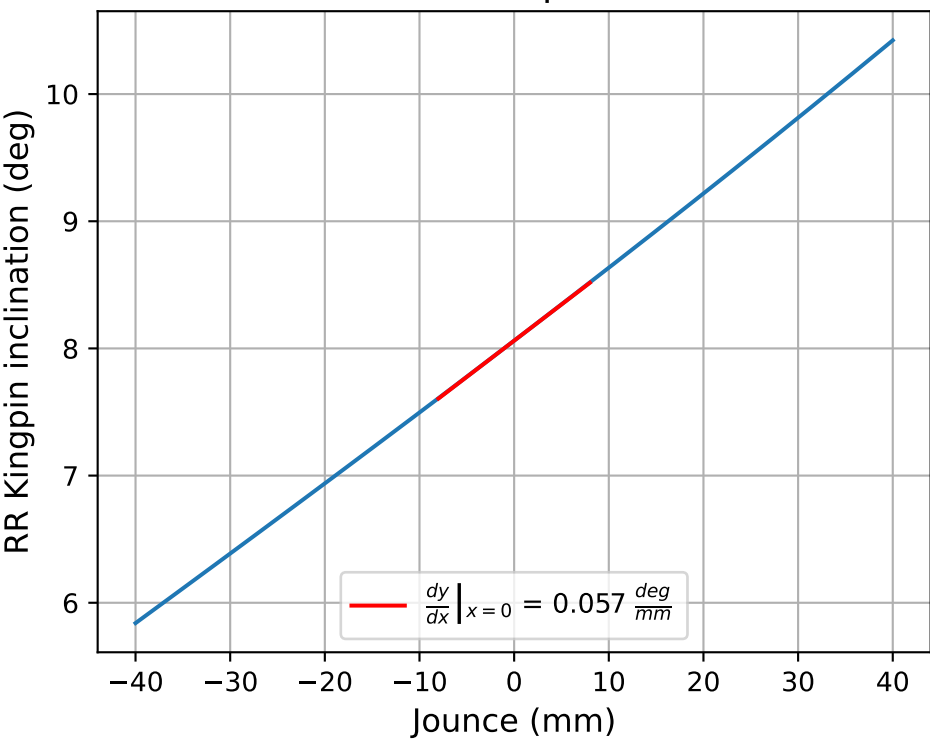
FR Bump KPI



RL Bump KPI



RR Bump KPI



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	$f(x) = 0.057x + 8.061$

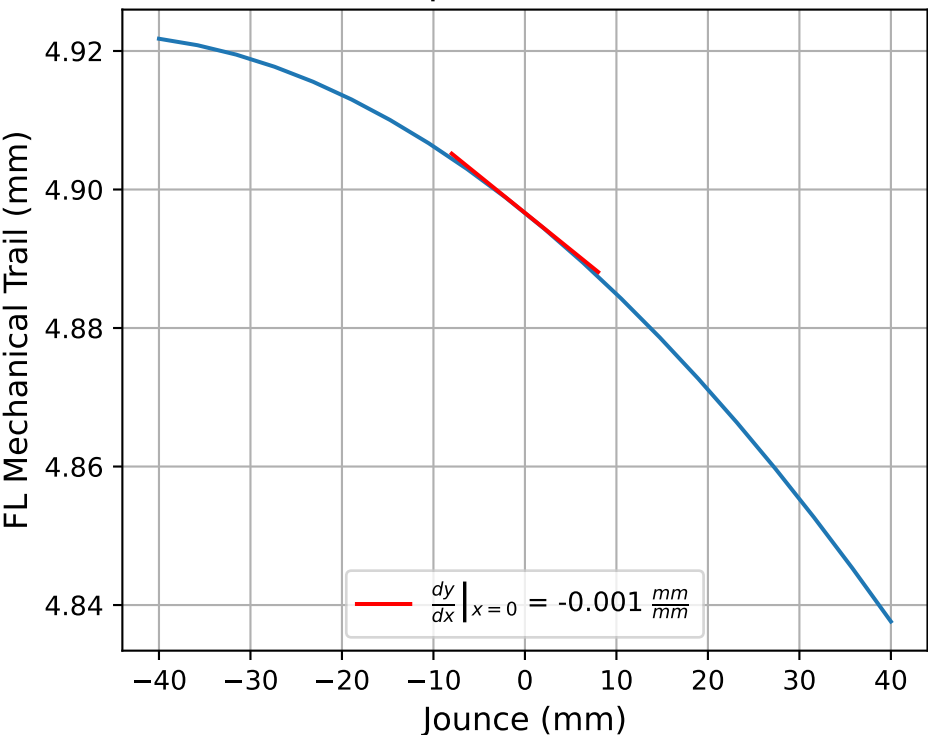
Cubic Fit

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

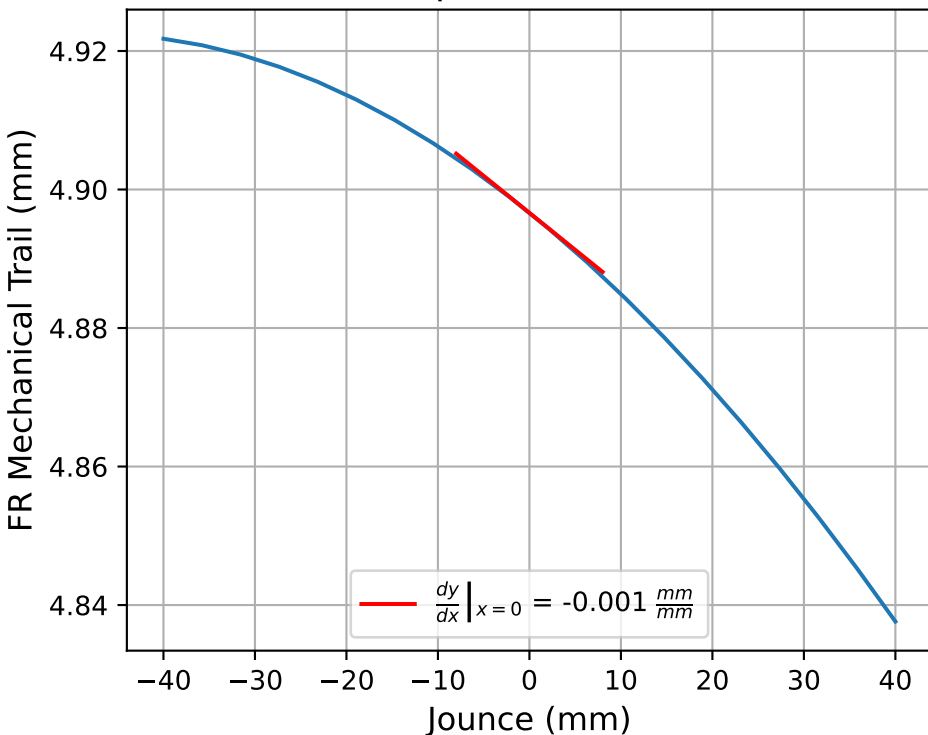
FL	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 11.6$
FR	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 11.6$
RL	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 8.061$
RR	$f(x) = 0.0x^3 + 0.0x^2 + 0.057x + 8.061$



FL Bump Mechanical Trail



FR Bump Mechanical Trail

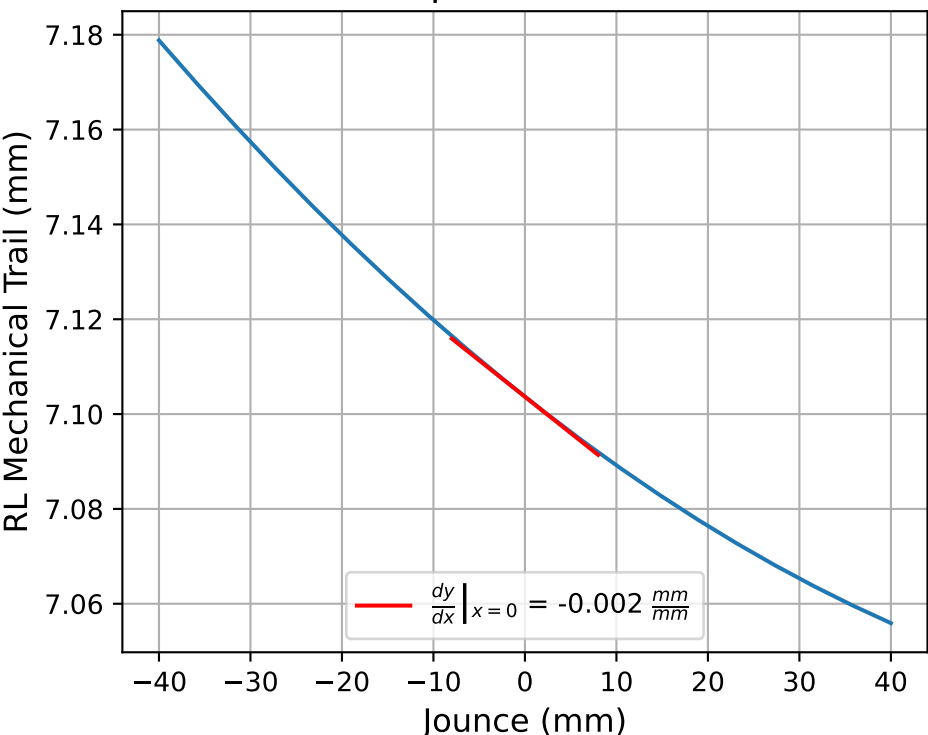


Linear Fit

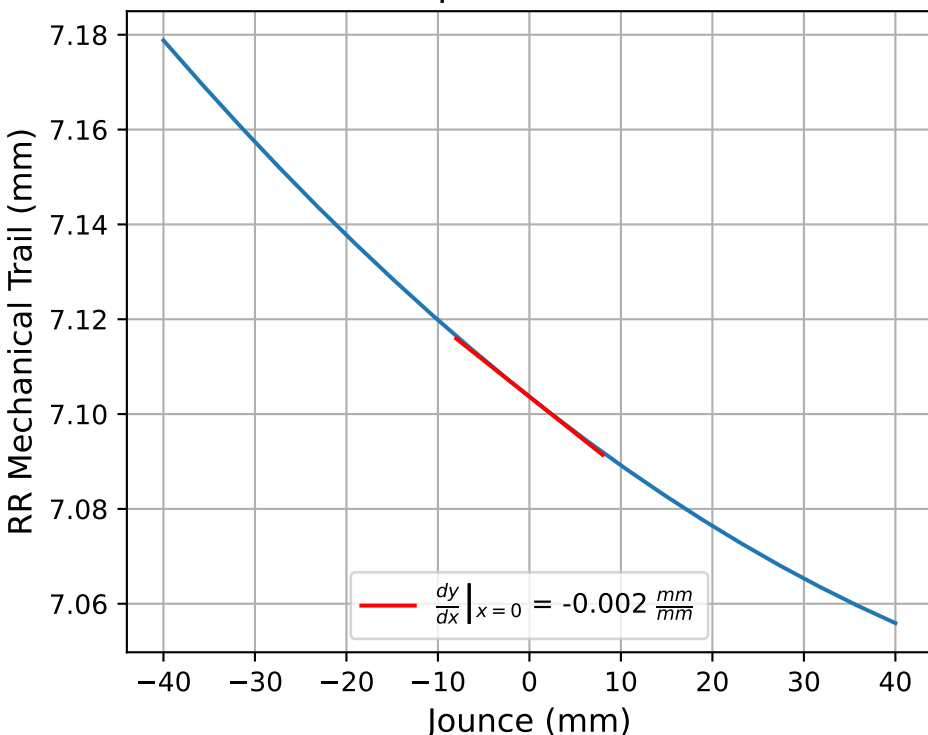
$$f(x) = a_1x + a_0$$

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

RL Bump Mechanical Trail



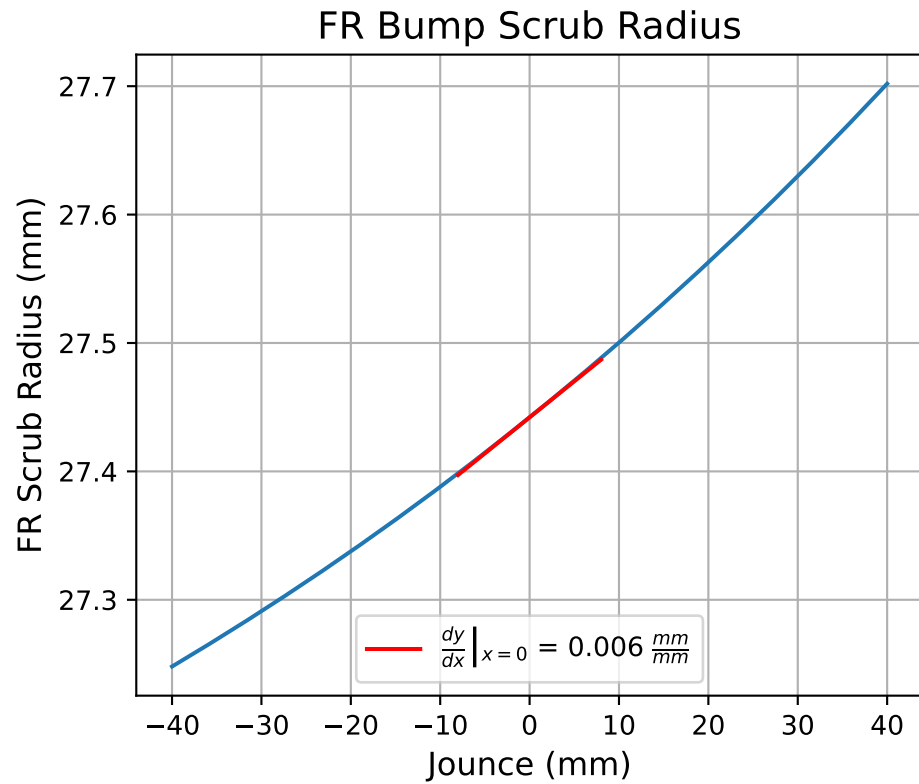
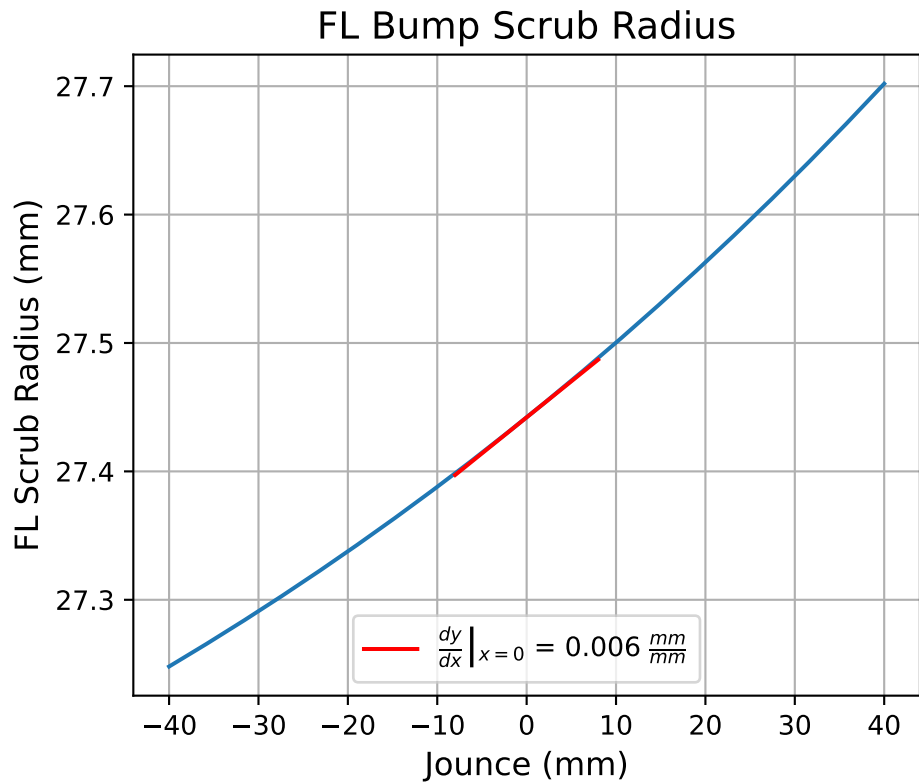
RR Bump Mechanical Trail



Cubic Fit

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

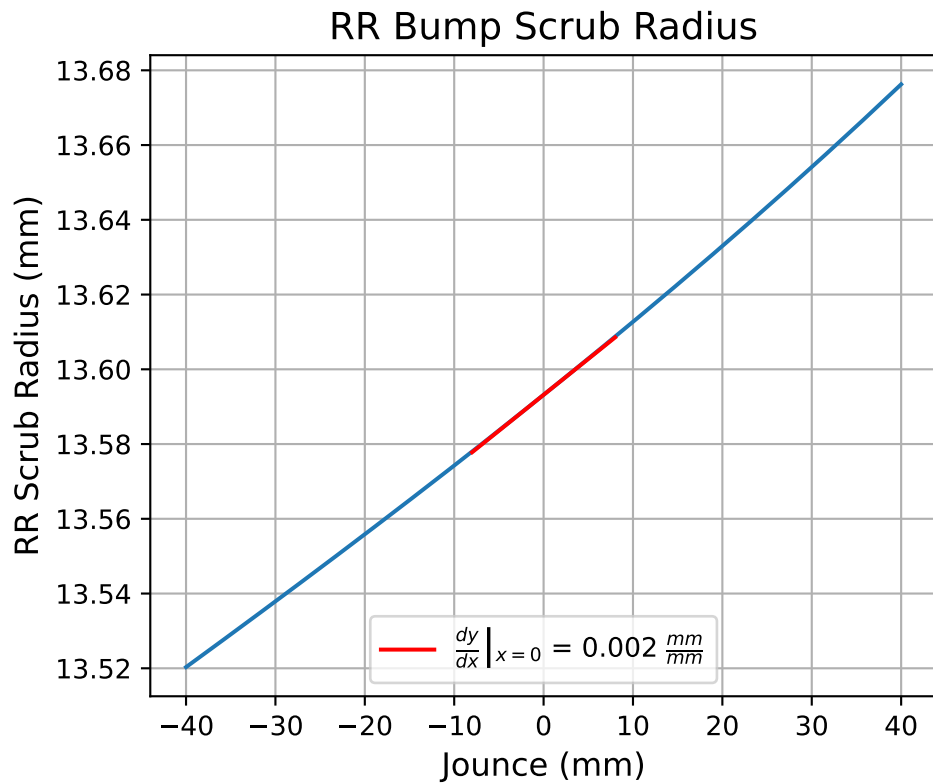
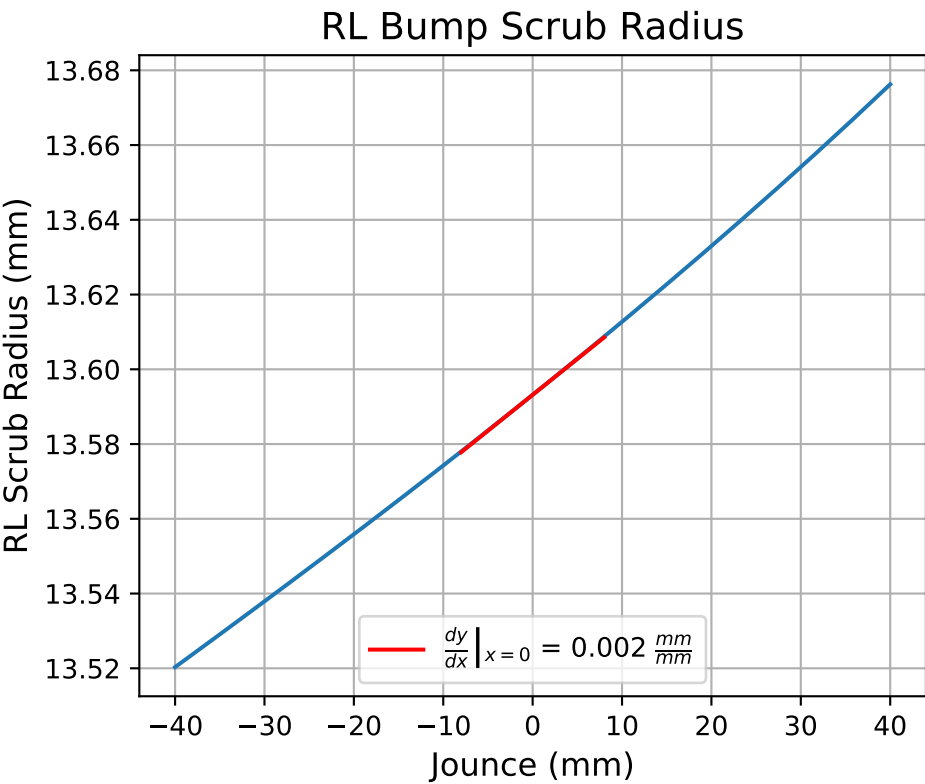
FL	$f(x) = 0.0x^3 + -0.0x^2 + -0.001x + 4.897$
FR	$f(x) = 0.0x^3 + -0.0x^2 + -0.001x + 4.897$
RL	$f(x) = -0.0x^3 + 0.0x^2 + -0.002x + 7.104$
RR	$f(x) = -0.0x^3 + 0.0x^2 + -0.002x + 7.104$



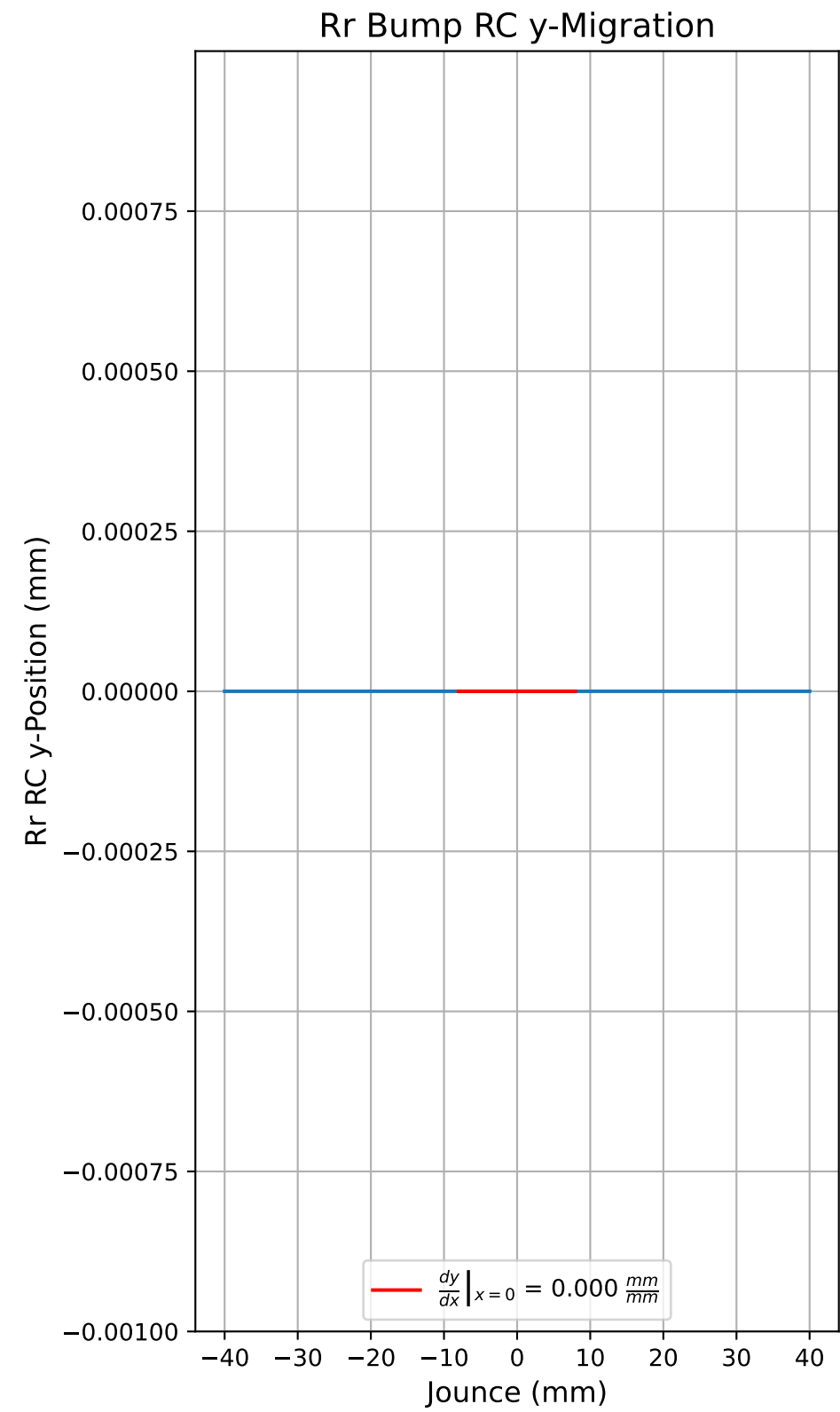
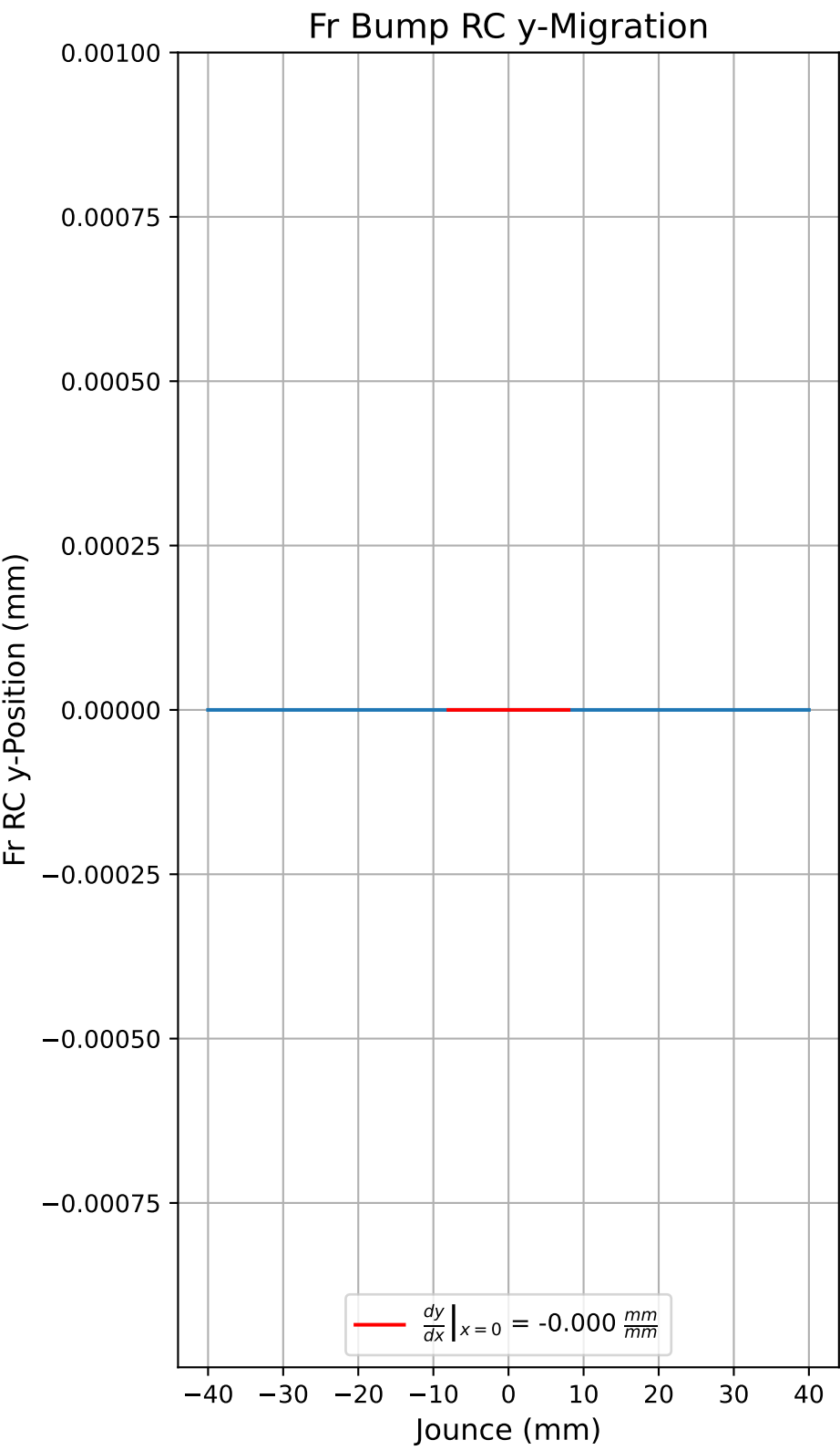
Nightwatch

FMU

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	$f(x) = 0.0x^3 + 0.0x^2 + 0.002x + 13.593$	



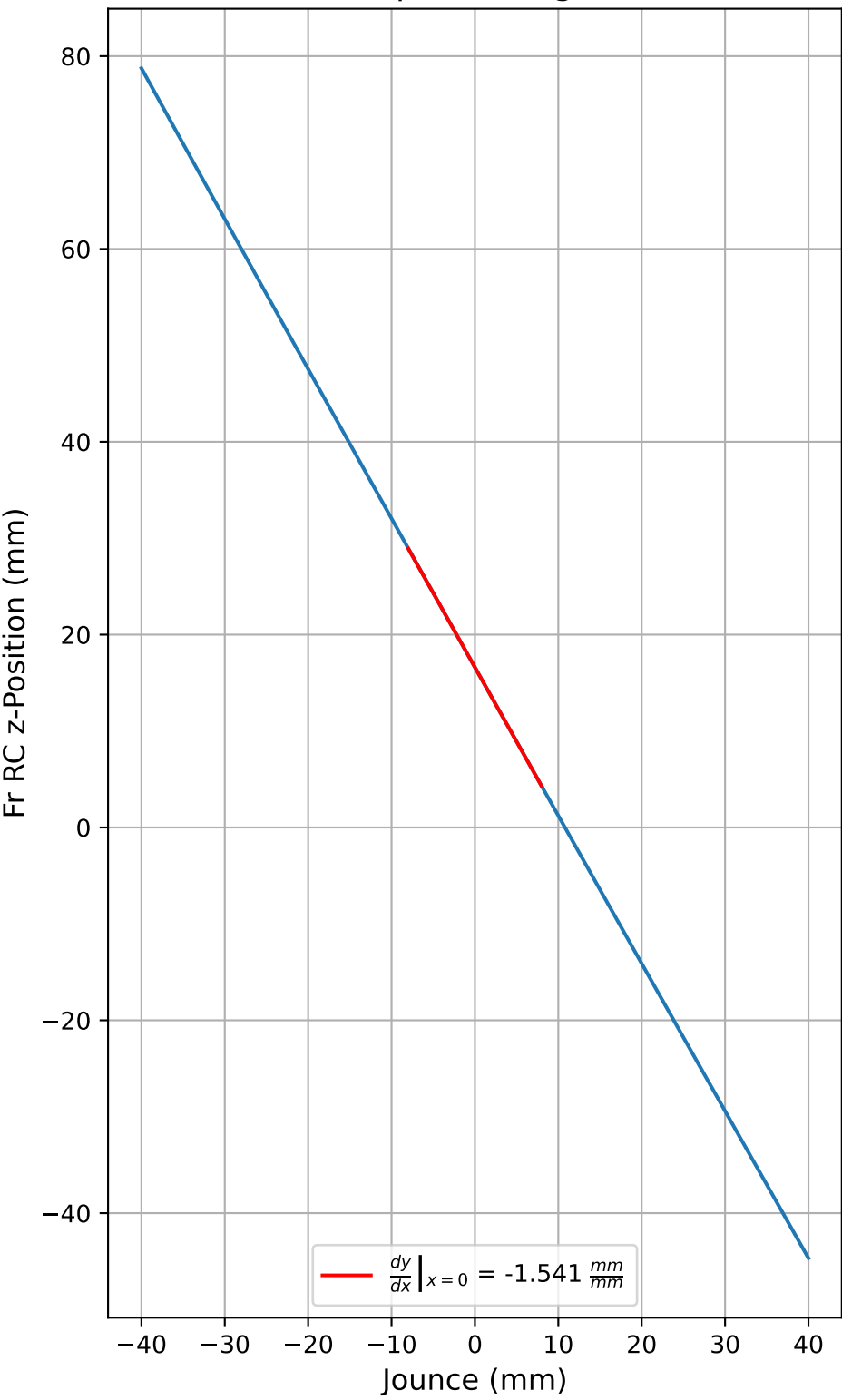
Nightwatch

FMU

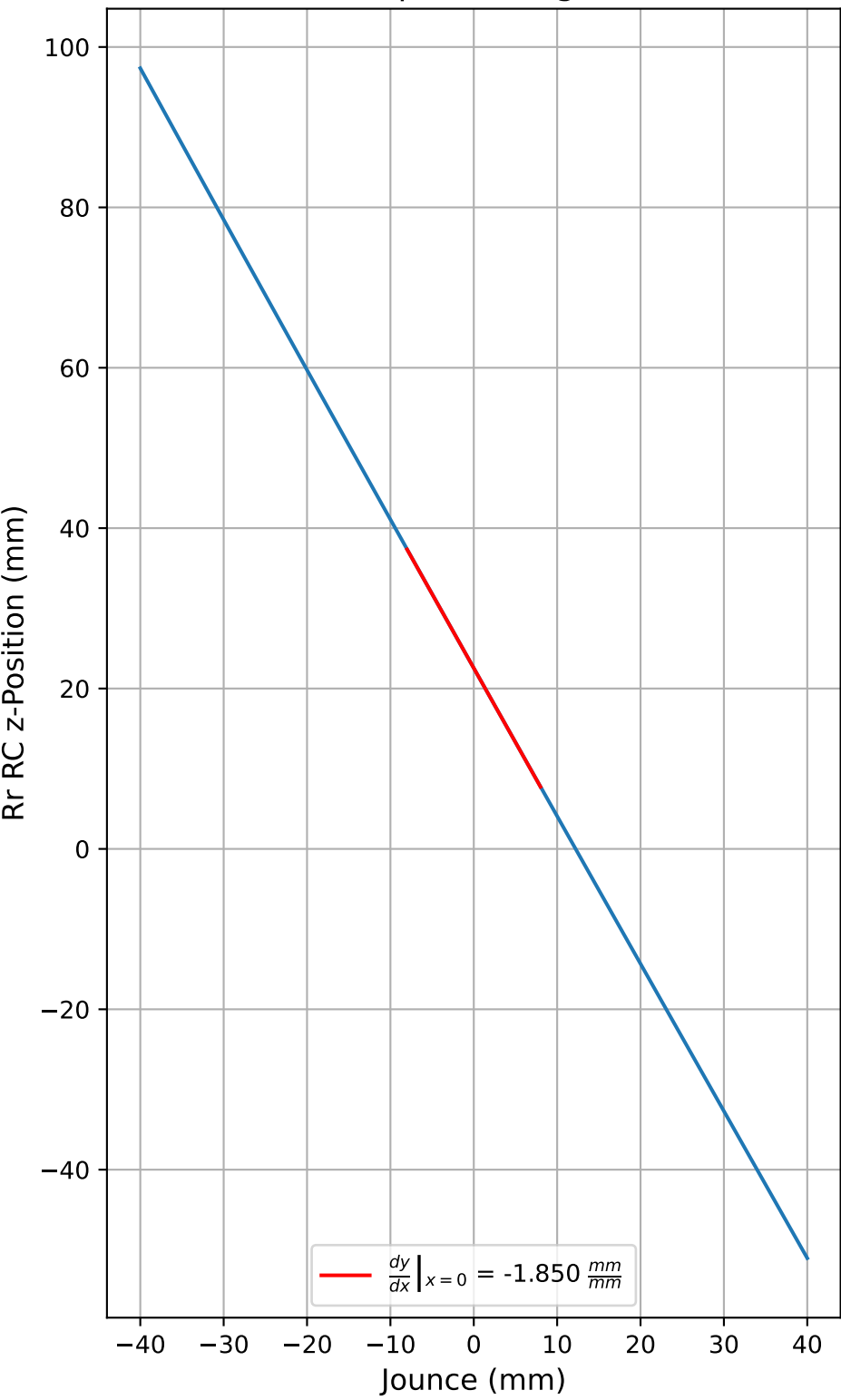
Linear Fit		$f(x) = a_1x + a_0$
Fr	$f(x) = -0.0x + -0.0$	
Rr	$f(x) = 0.0x + -0.0$	

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

Fr Bump RC z-Migration



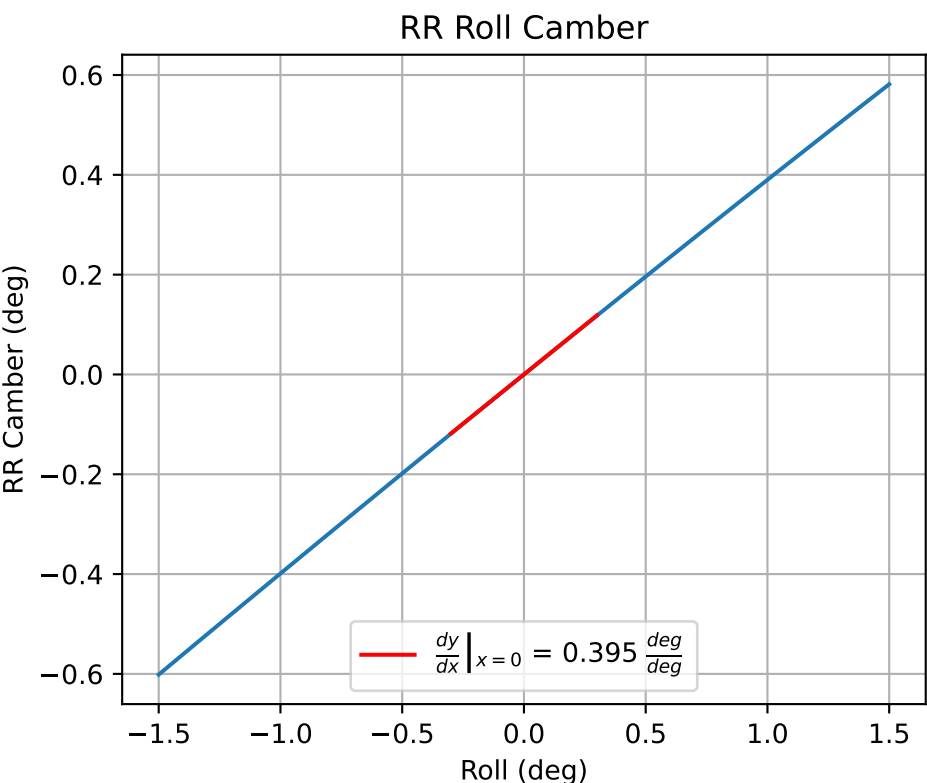
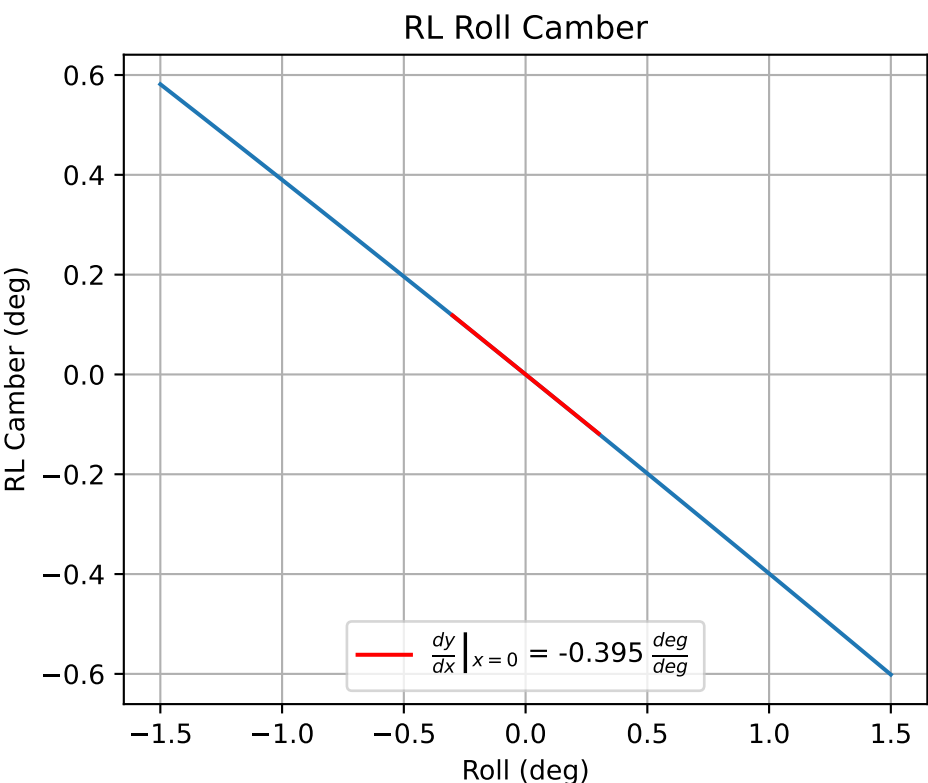
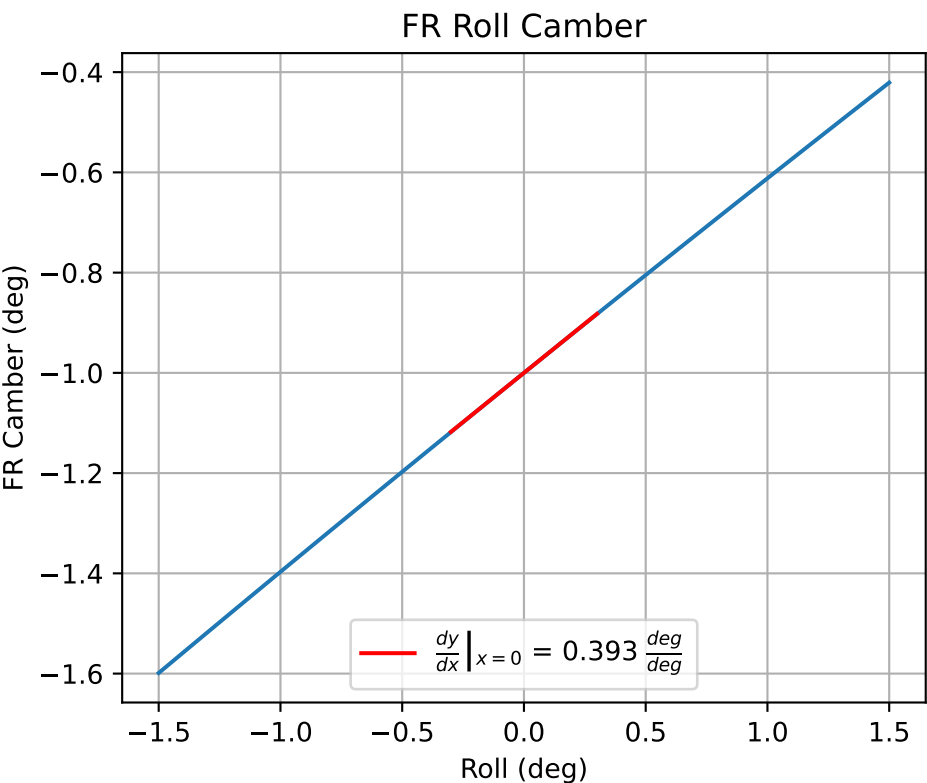
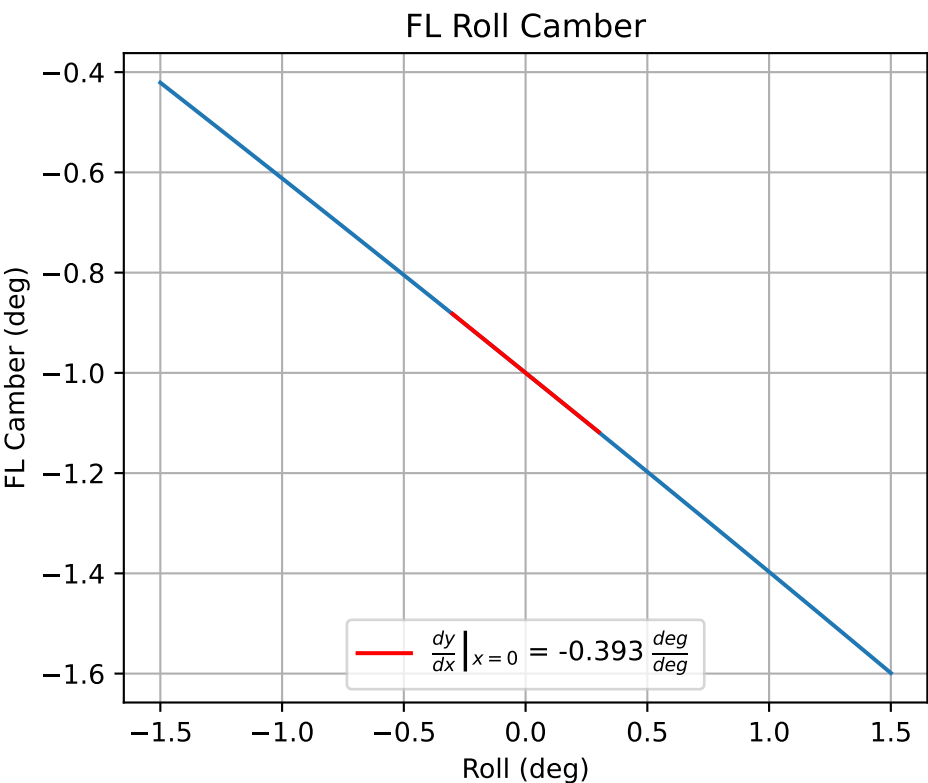
Rr Bump RC z-Migration



— Nightwatch
- - - FMU

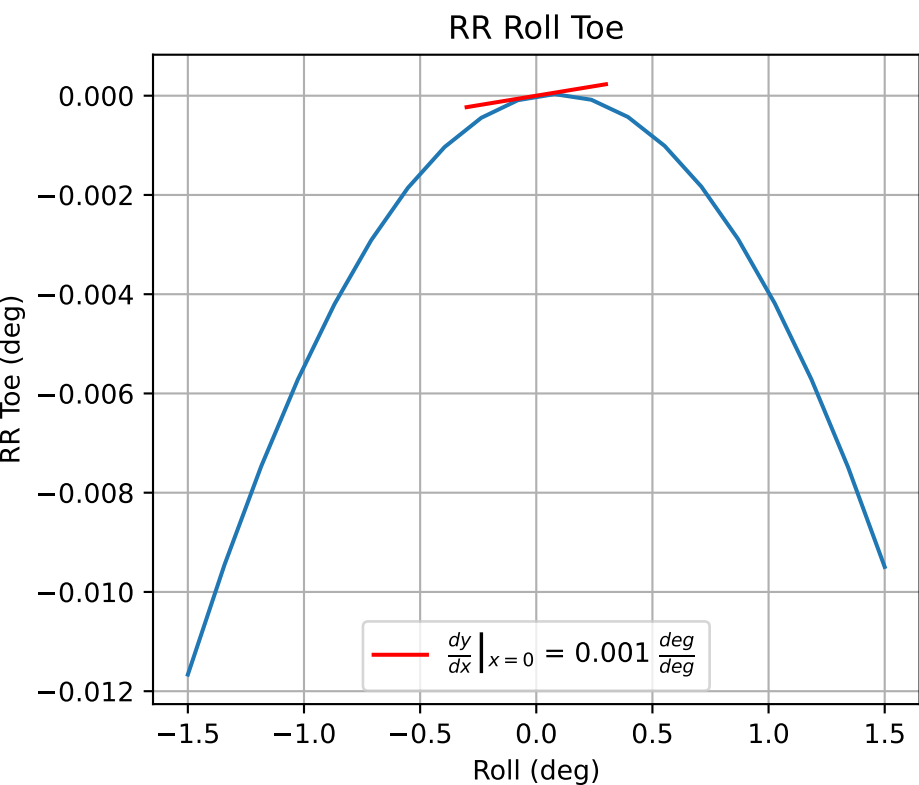
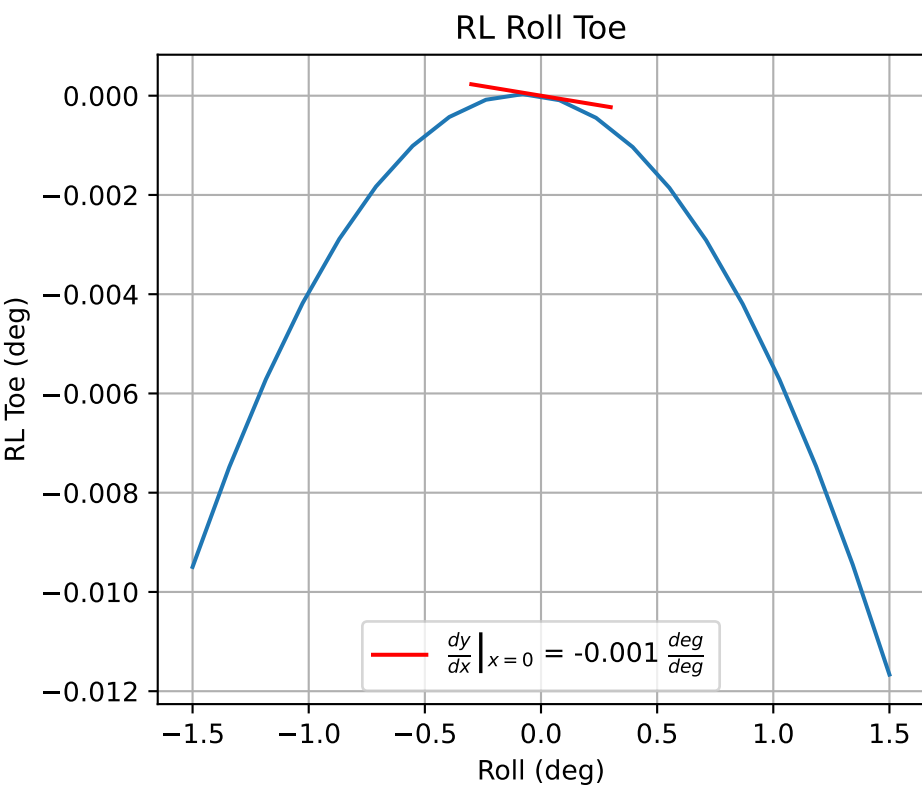
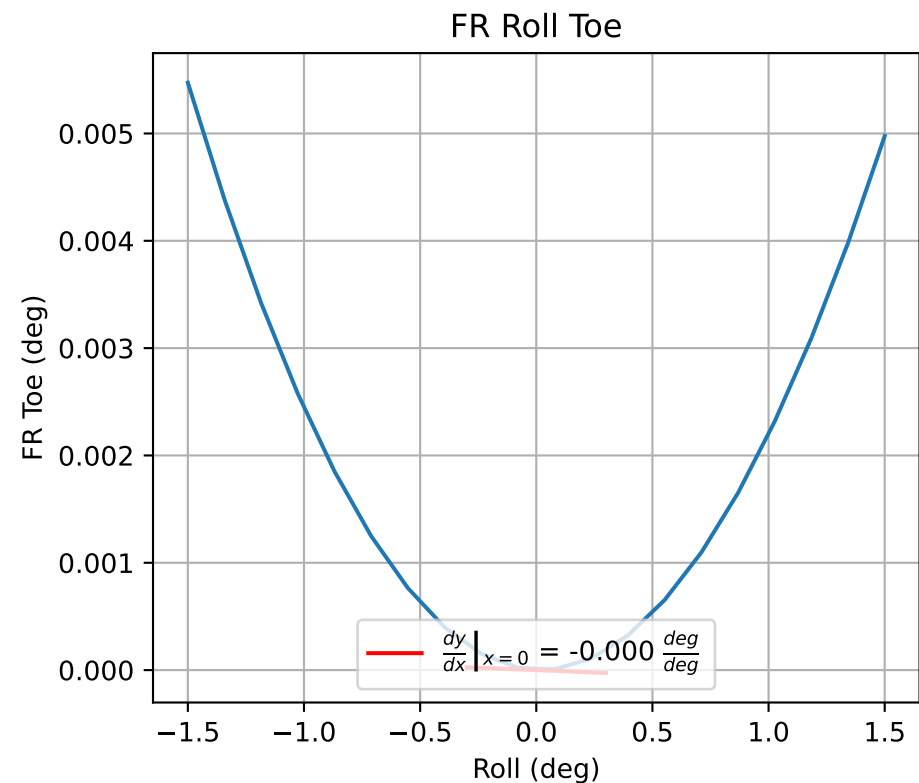
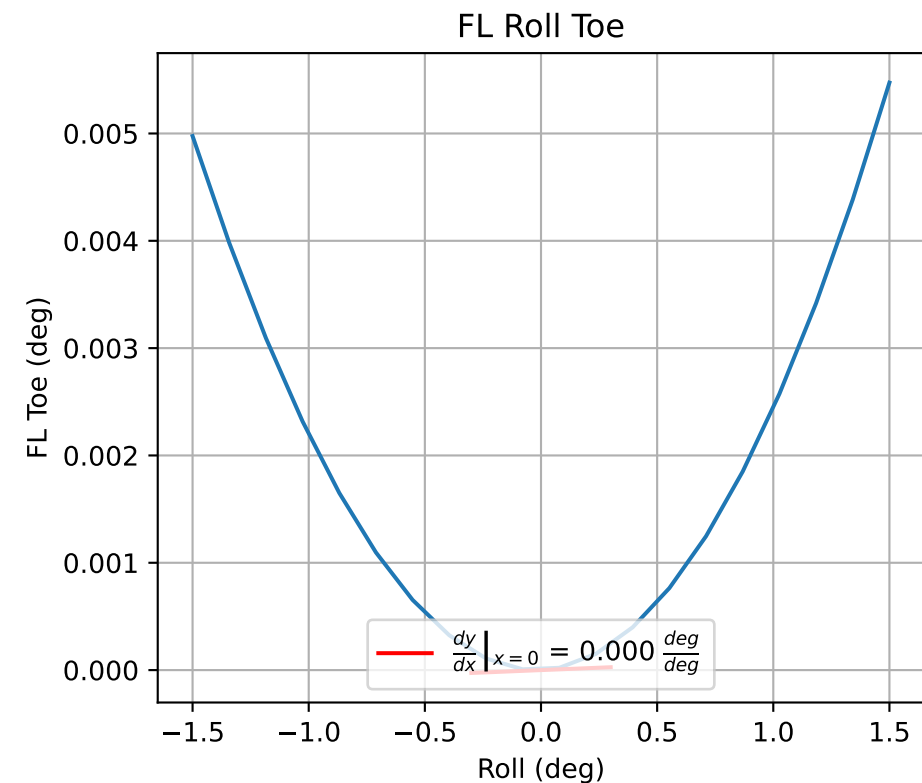
Linear Fit		$f(x) = a_1x + a_0$
Fr	$f(x) = -1.541x + 16.608$	
Rr	$f(x) = -1.85x + 22.543$	

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		$f(x) = -0.393x + -1.0$
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		$f(x) = -0.0x^3 + -0.004x^2 + -0.393x + -1.0$
FR		$f(x) = 0.0x^3 + -0.004x^2 + 0.393x + -1.0$
RL		$f(x) = 0.0x^3 + -0.004x^2 + -0.395x + 0.0$
RR		$f(x) = -0.0x^3 + -0.004x^2 + 0.395x + 0.0$



— Nightwatch
- - - FMU

Linear Fit

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

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

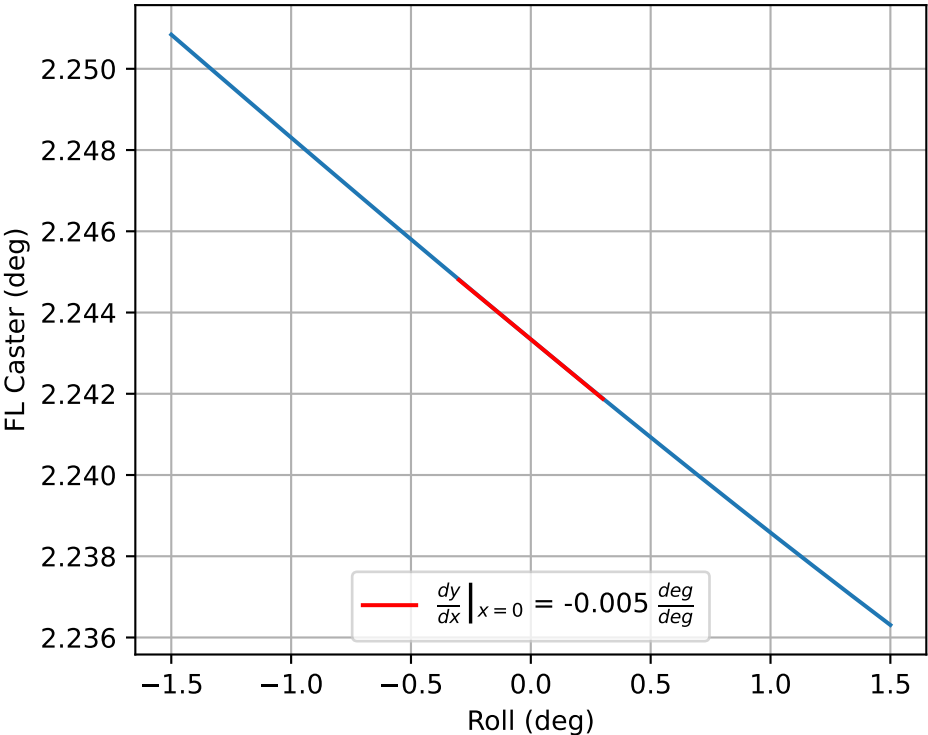
Cubic Fit

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

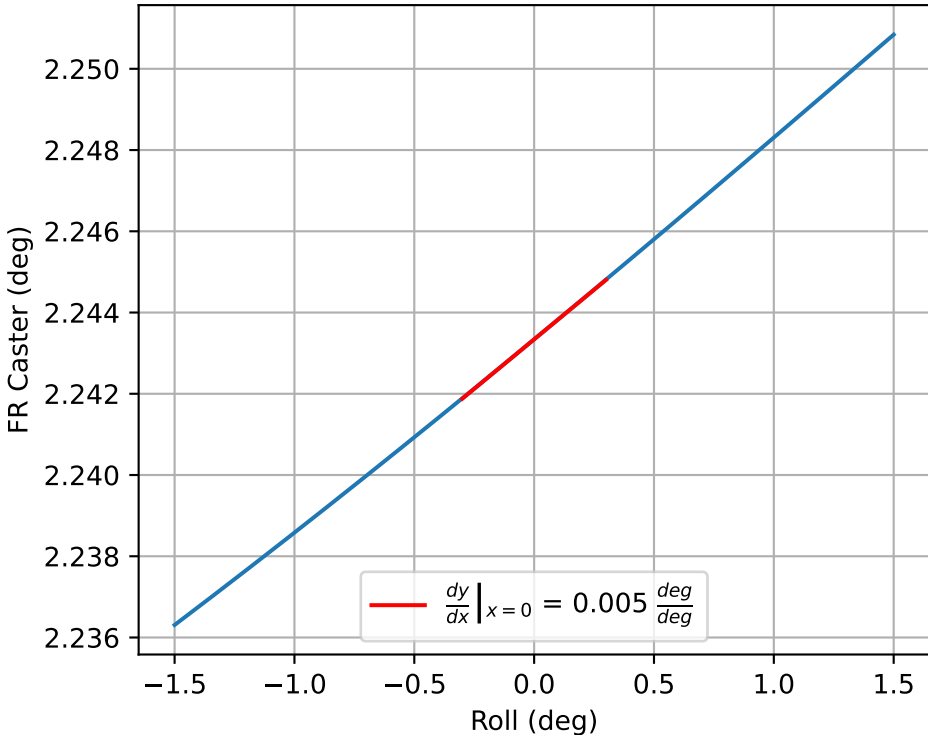
FL	$f(x) = 0.0x^3 + 0.002x^2 + 0.0x + -0.0$
FR	$f(x) = -0.0x^3 + 0.002x^2 + -0.0x + -0.0$
RL	$f(x) = 0.0x^3 + -0.005x^2 + -0.001x + 0.0$
RR	$f(x) = -0.0x^3 + -0.005x^2 + 0.001x + 0.0$



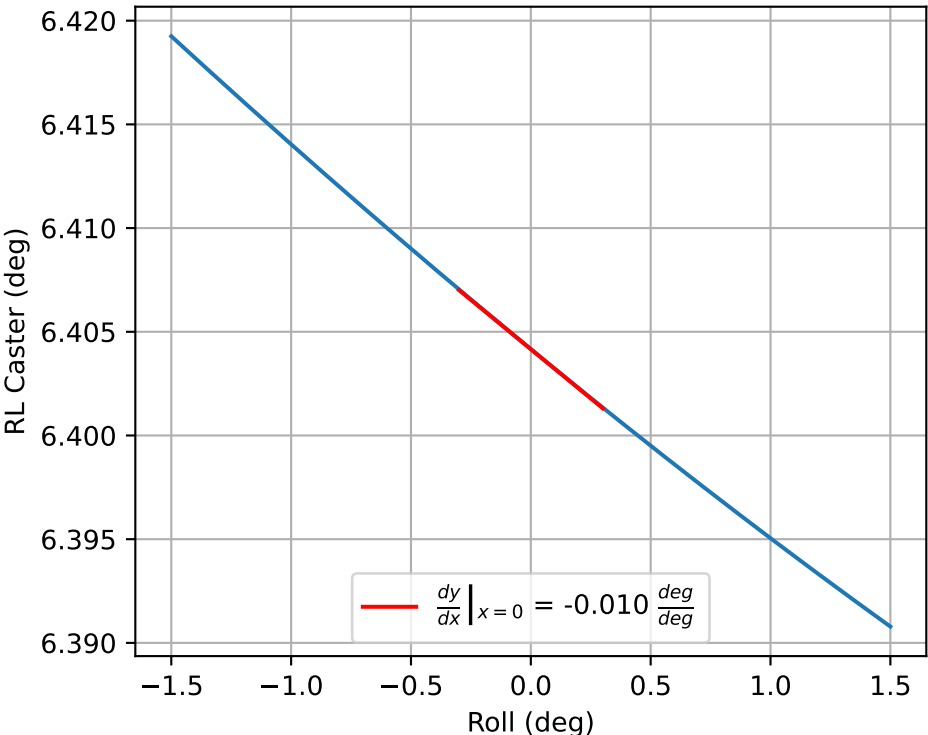
FL Roll Caster



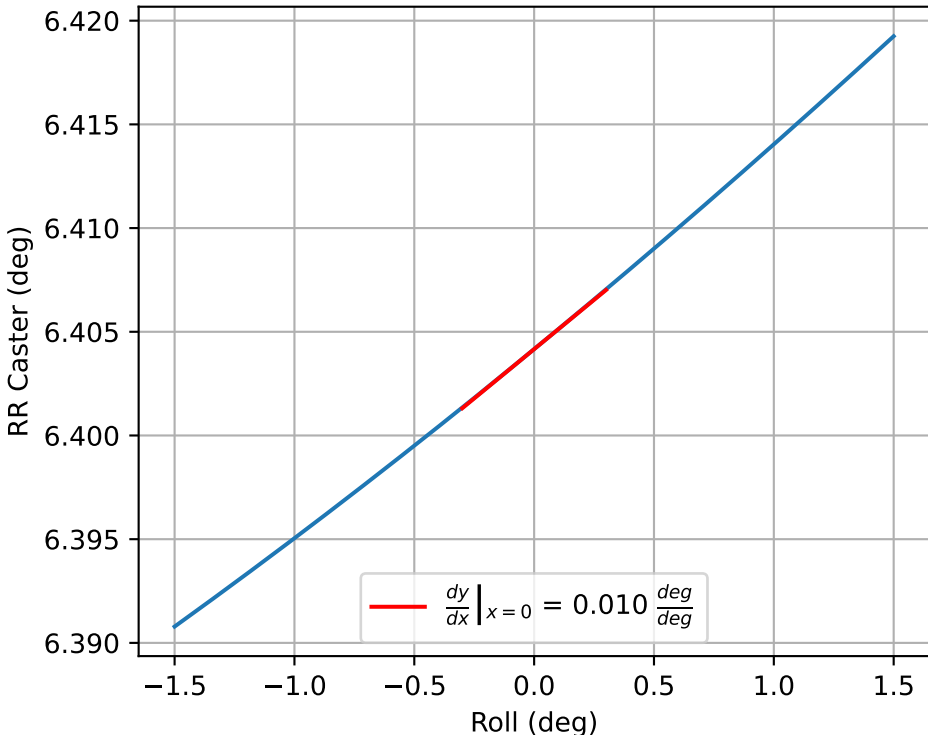
FR Roll Caster



RL Roll Caster



RR Roll Caster



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	$f(x) = 0.01x + 6.404$

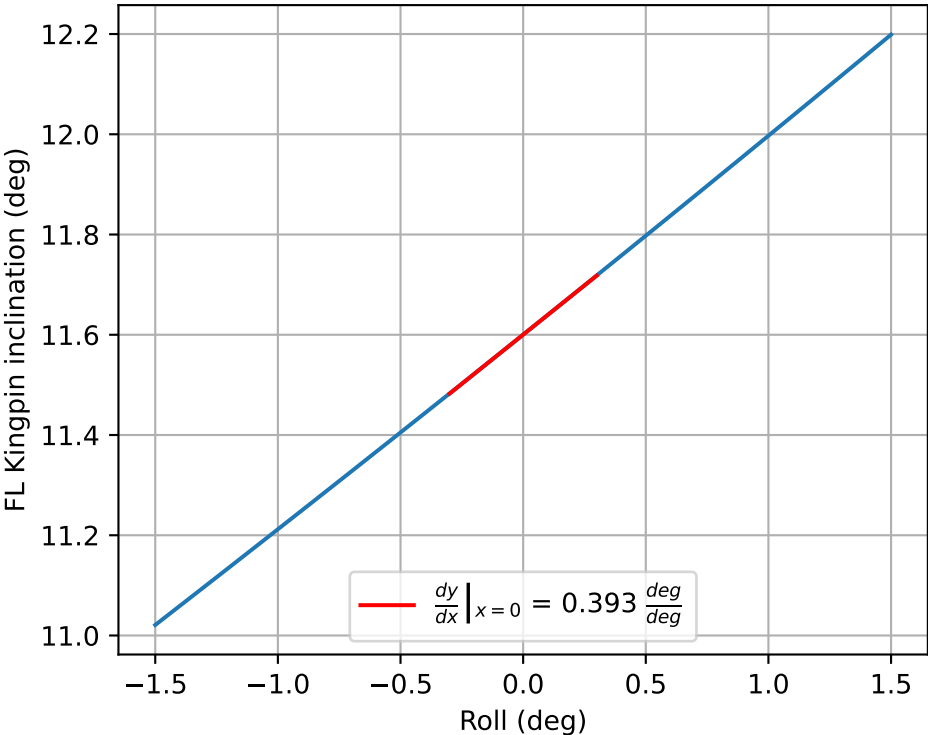
Cubic Fit

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

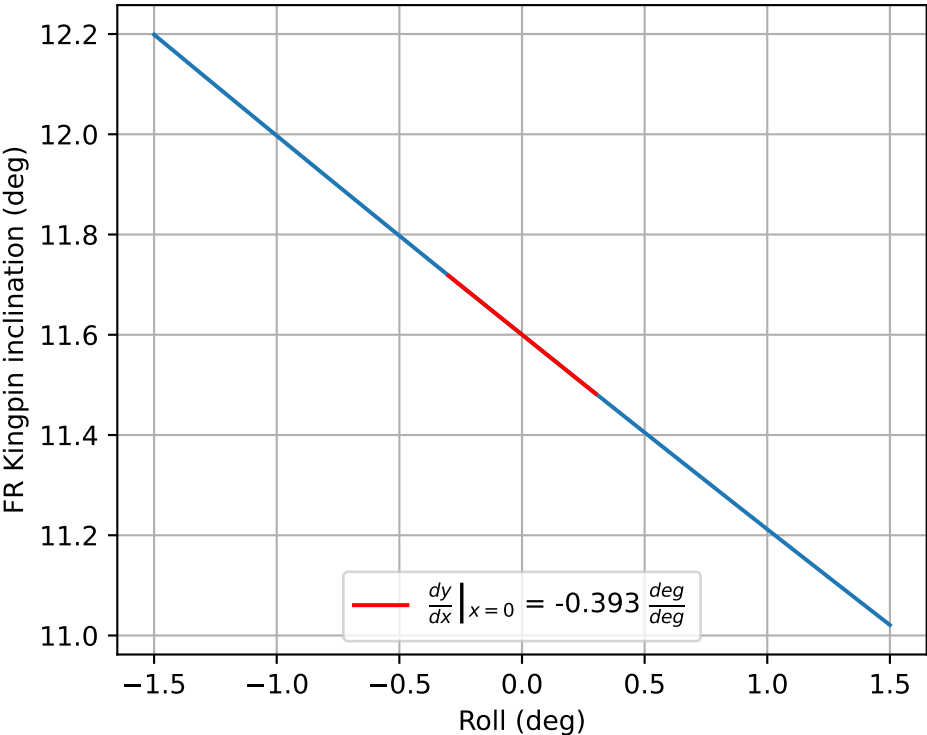
FL	$f(x) = 0.0x^3 + 0.0x^2 + -0.005x + 2.243$
FR	$f(x) = -0.0x^3 + 0.0x^2 + 0.005x + 2.243$
RL	$f(x) = 0.0x^3 + 0.0x^2 + -0.01x + 6.404$
RR	$f(x) = -0.0x^3 + 0.0x^2 + 0.01x + 6.404$



FL Roll KPI



FR Roll KPI

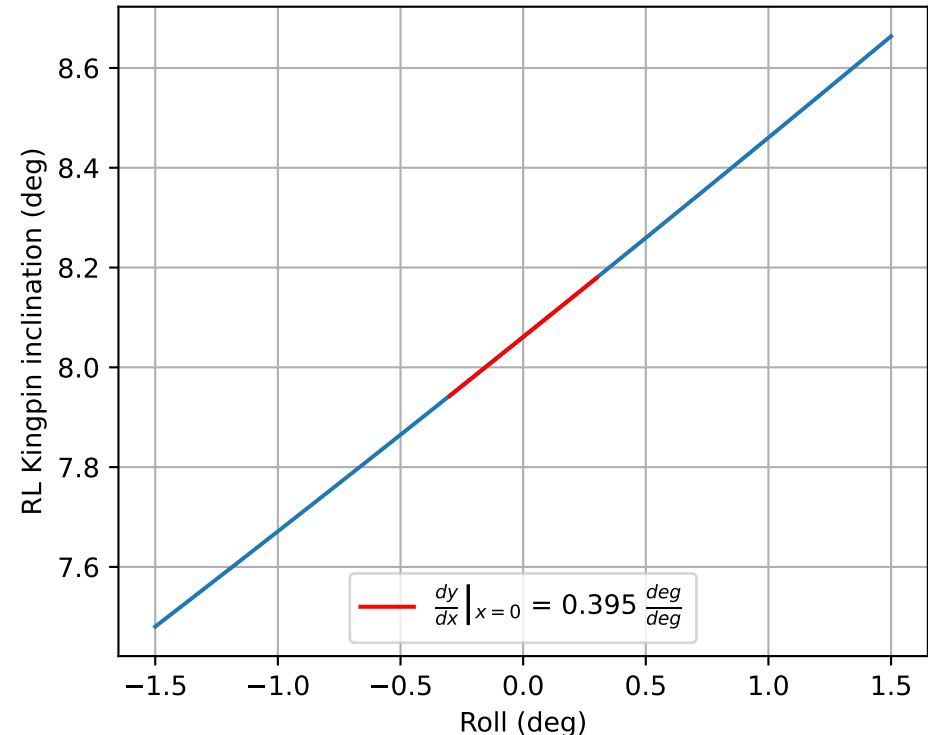


Linear Fit

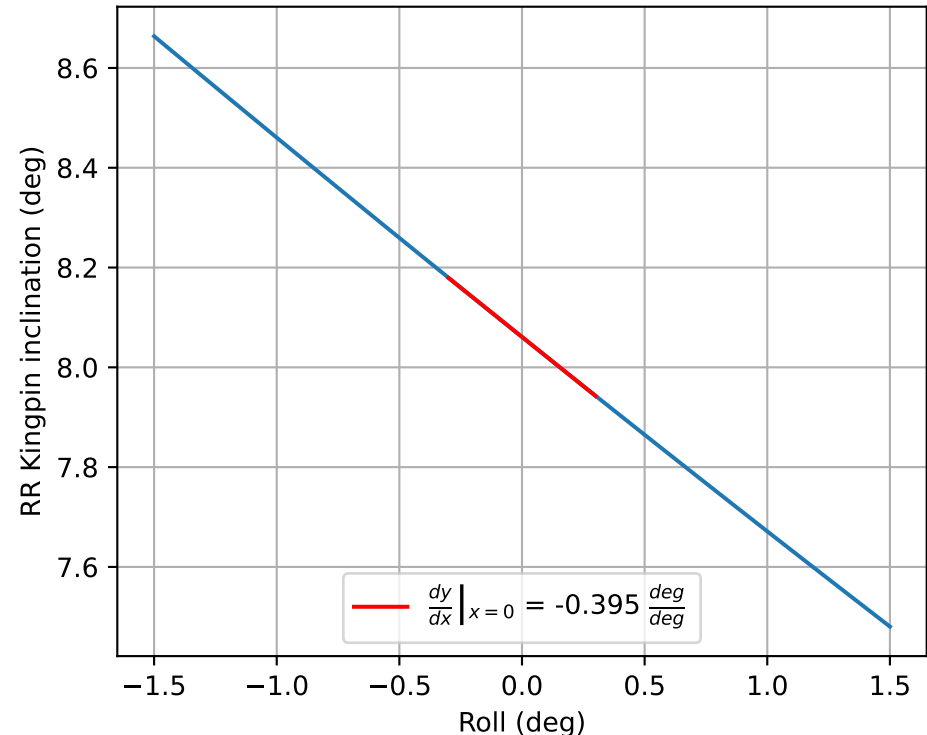
$$f(x) = a_1x + a_0$$

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

RL Roll KPI



RR Roll KPI



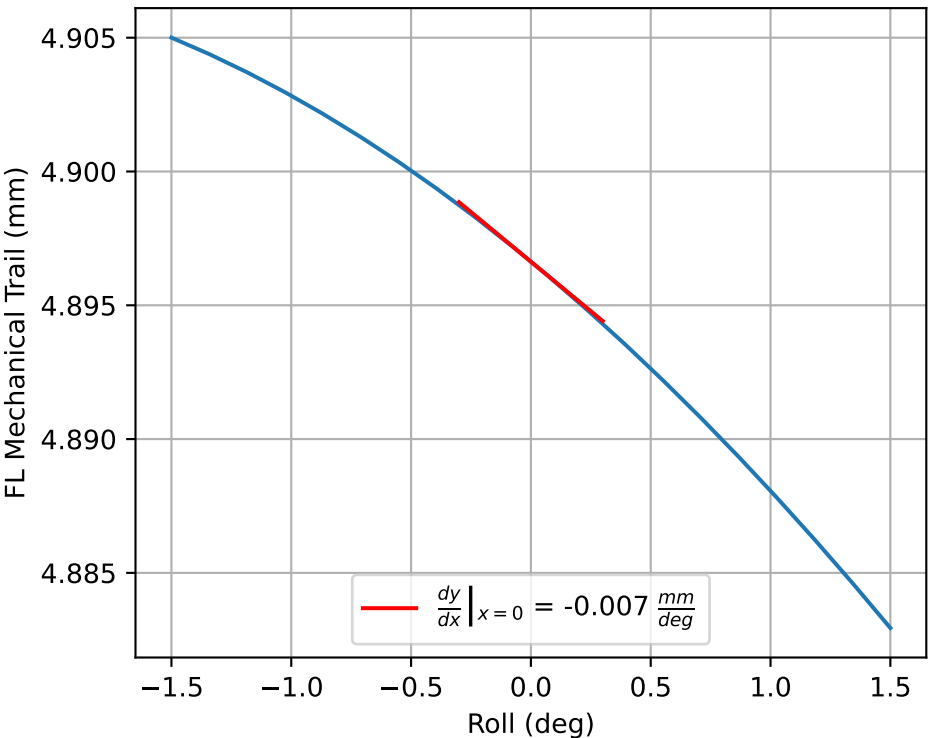
Cubic Fit

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

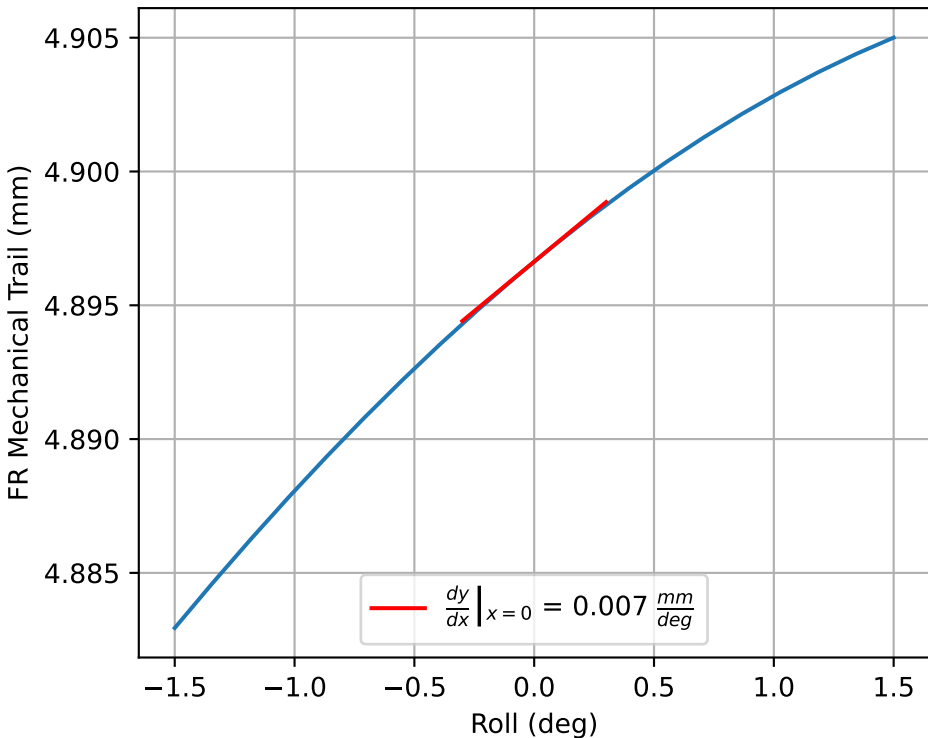
FL	$f(x) = 0.0x^3 + 0.004x^2 + 0.393x + 11.6$
FR	$f(x) = -0.0x^3 + 0.004x^2 + -0.393x + 11.6$
RL	$f(x) = -0.0x^3 + 0.005x^2 + 0.395x + 8.061$
RR	$f(x) = 0.0x^3 + 0.005x^2 + -0.395x + 8.061$



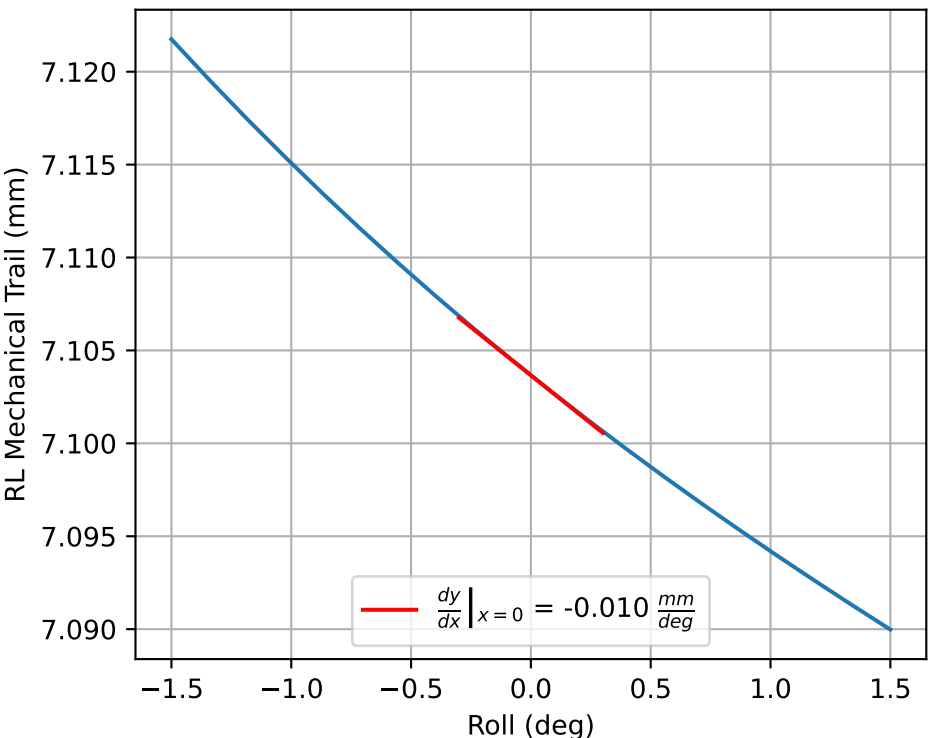
FL Roll Mechanical Trail



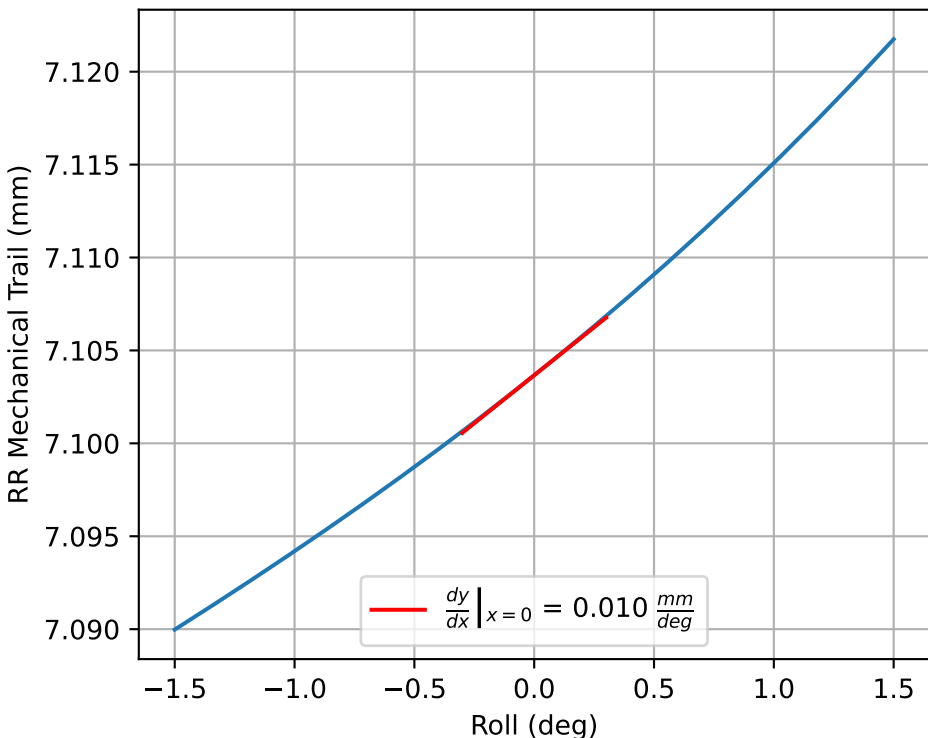
FR Roll Mechanical Trail



RL Roll Mechanical Trail



RR Roll Mechanical Trail



Linear Fit

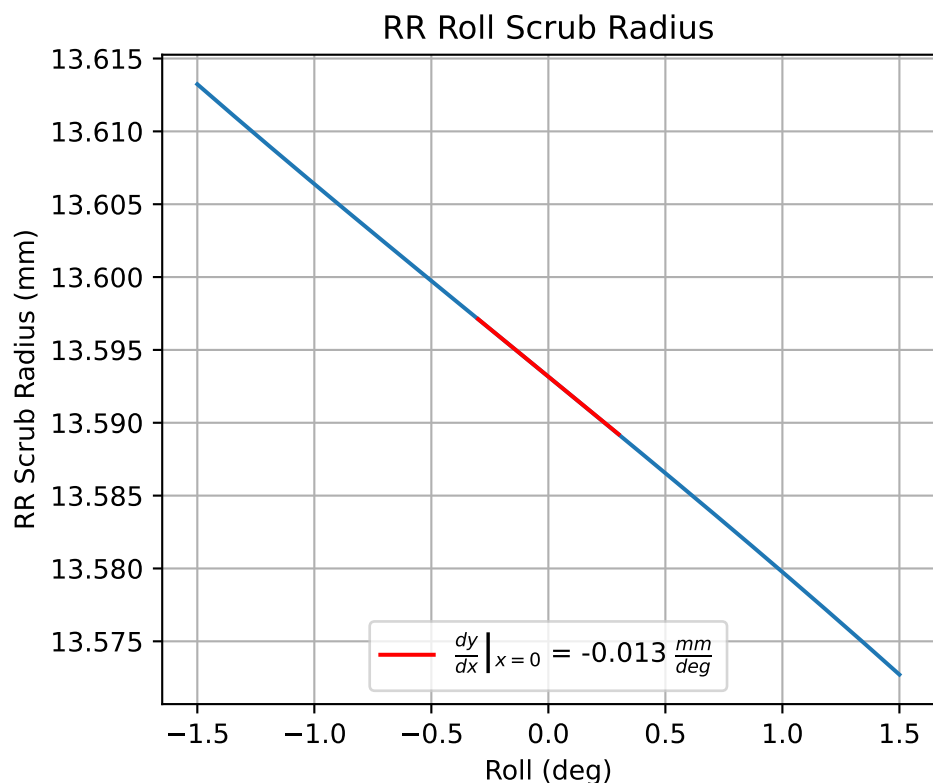
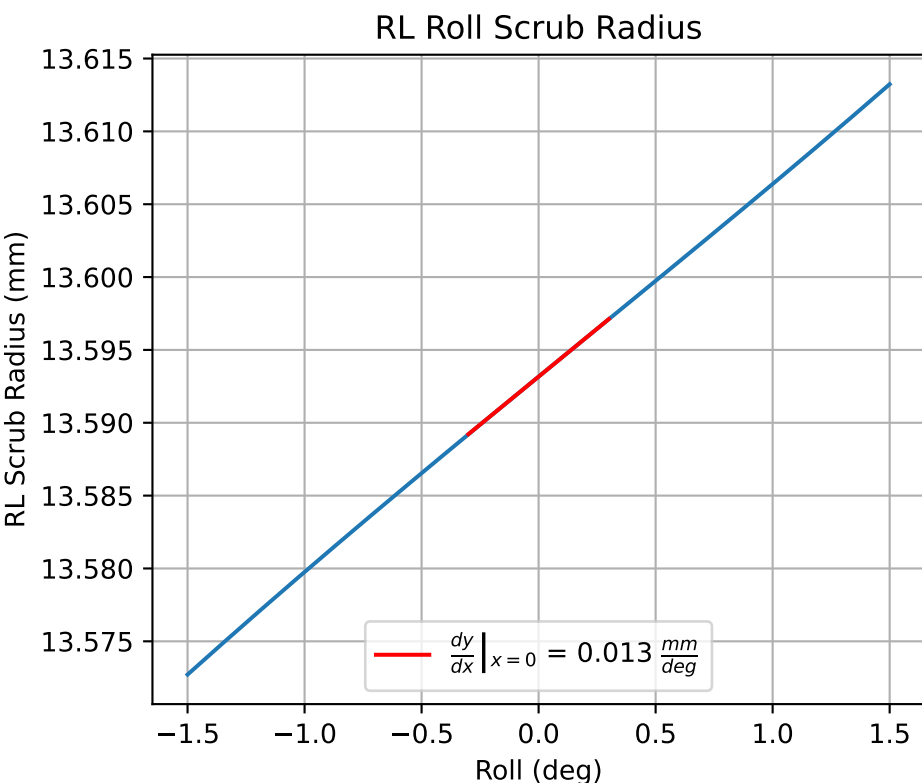
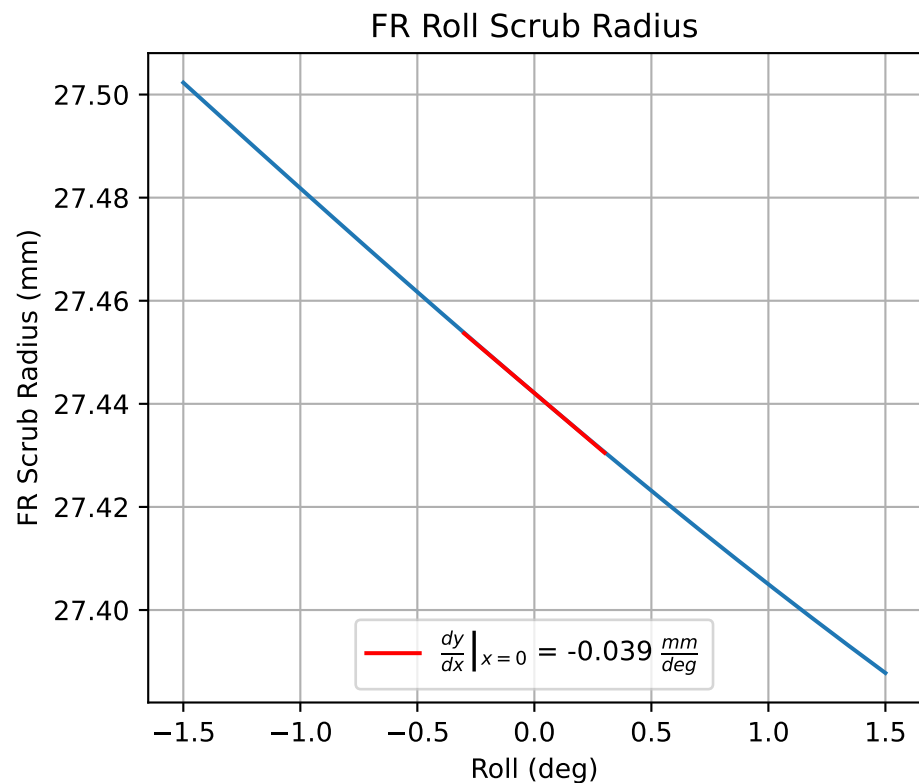
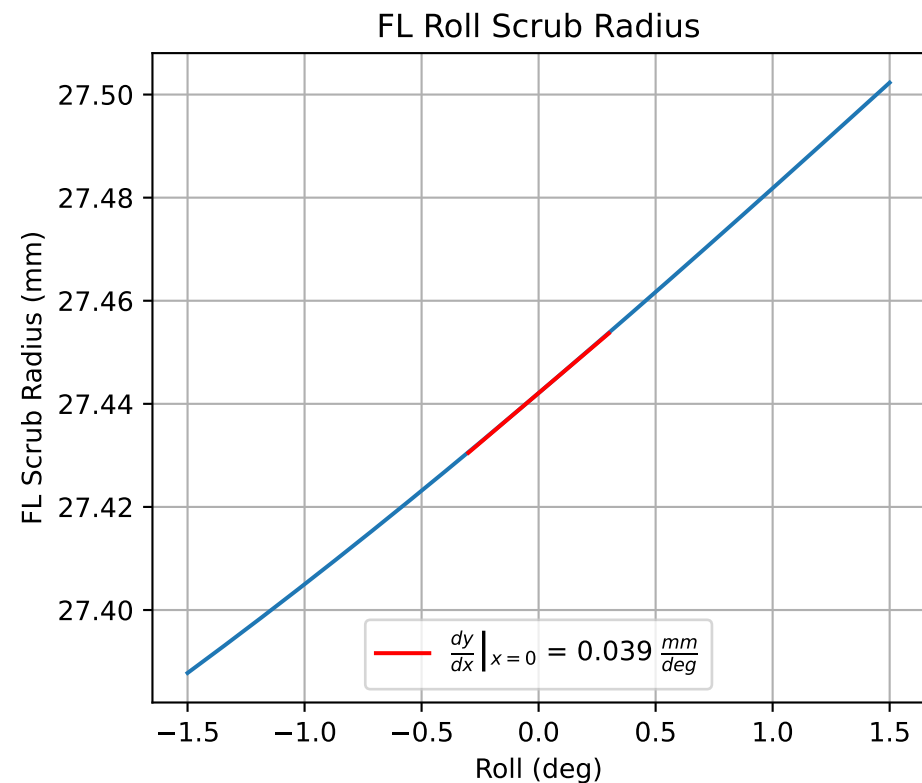
$$f(x) = a_1x + a_0$$

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

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

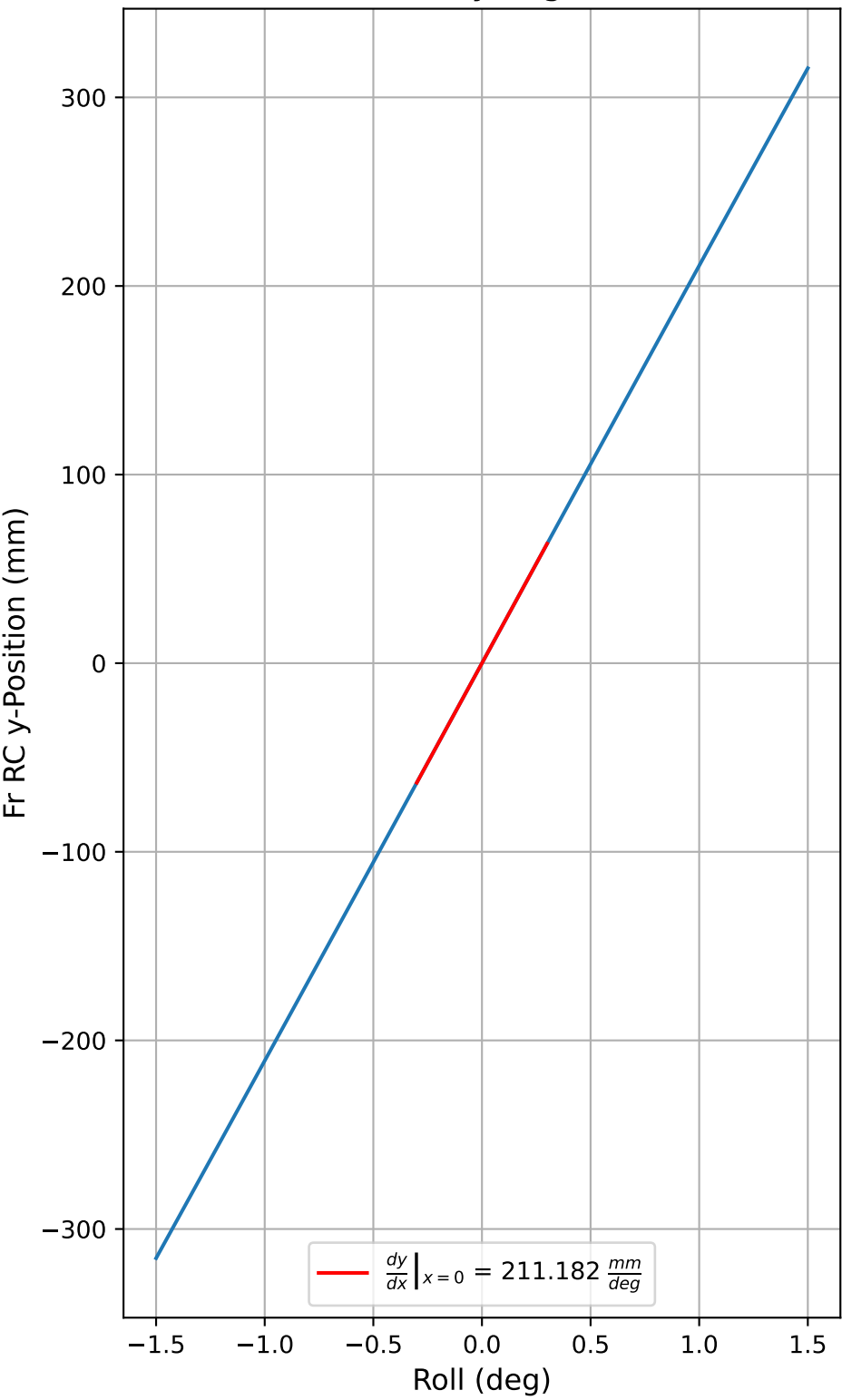
FL	$f(x) = 0.0x^3 + -0.001x^2 + -0.007x + 4.897$
FR	$f(x) = -0.0x^3 + -0.001x^2 + 0.007x + 4.897$
RL	$f(x) = -0.0x^3 + 0.001x^2 + -0.01x + 7.104$
RR	$f(x) = 0.0x^3 + 0.001x^2 + 0.01x + 7.104$



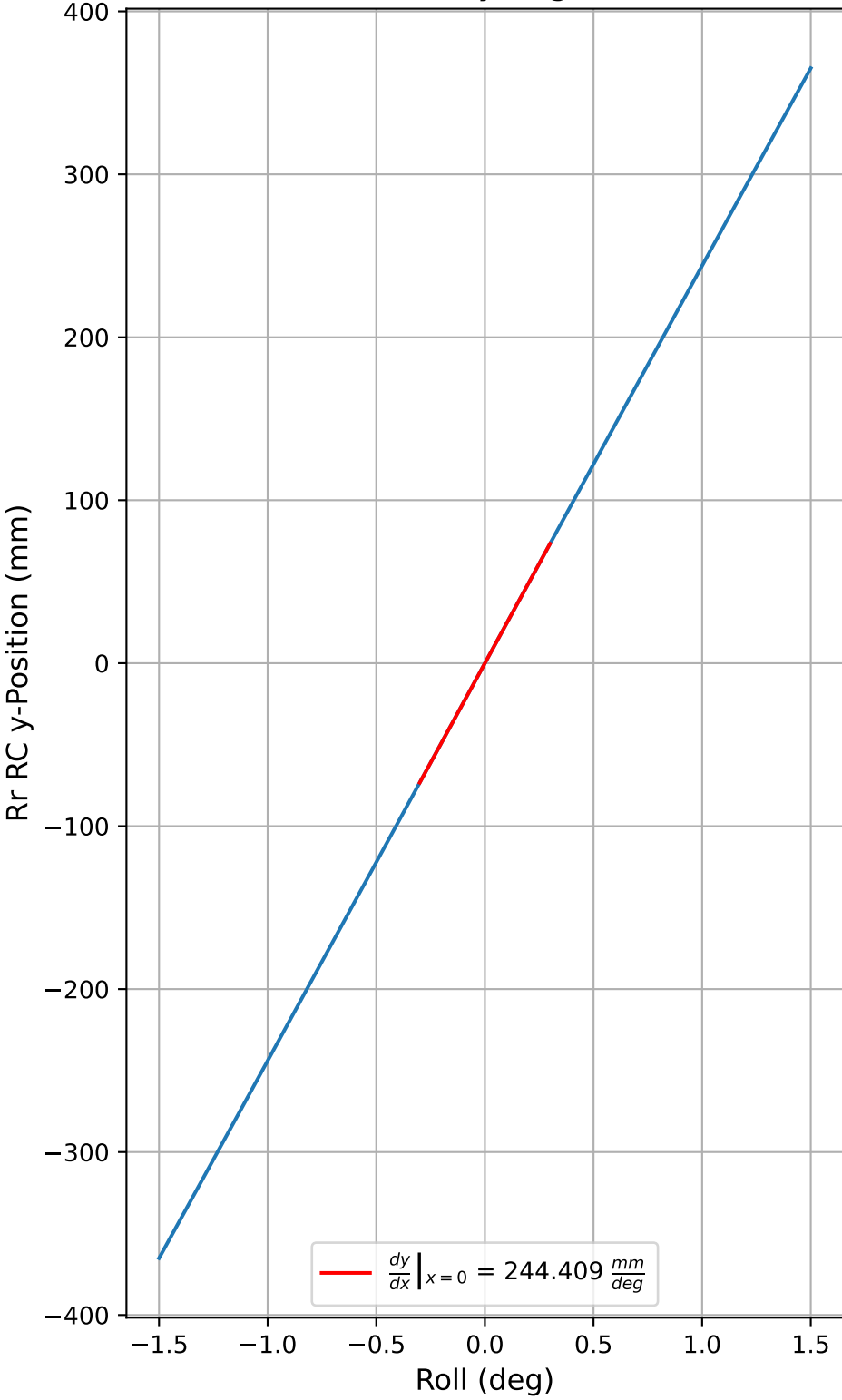
Linear Fit $f(x) = a_1x + a_0$	
FL	$f(x) = 0.039x + 27.442$
FR	$f(x) = -0.039x + 27.442$
RL	$f(x) = 0.013x + 13.593$
RR	$f(x) = -0.013x + 13.593$

Cubic Fit $f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$	
FL	$f(x) = -0.0x^3 + 0.001x^2 + 0.039x + 27.442$
FR	$f(x) = 0.0x^3 + 0.001x^2 + -0.039x + 27.442$
RL	$f(x) = 0.0x^3 + -0.0x^2 + 0.013x + 13.593$
RR	$f(x) = -0.0x^3 + -0.0x^2 + -0.013x + 13.593$

Fr Roll RC y-Migration



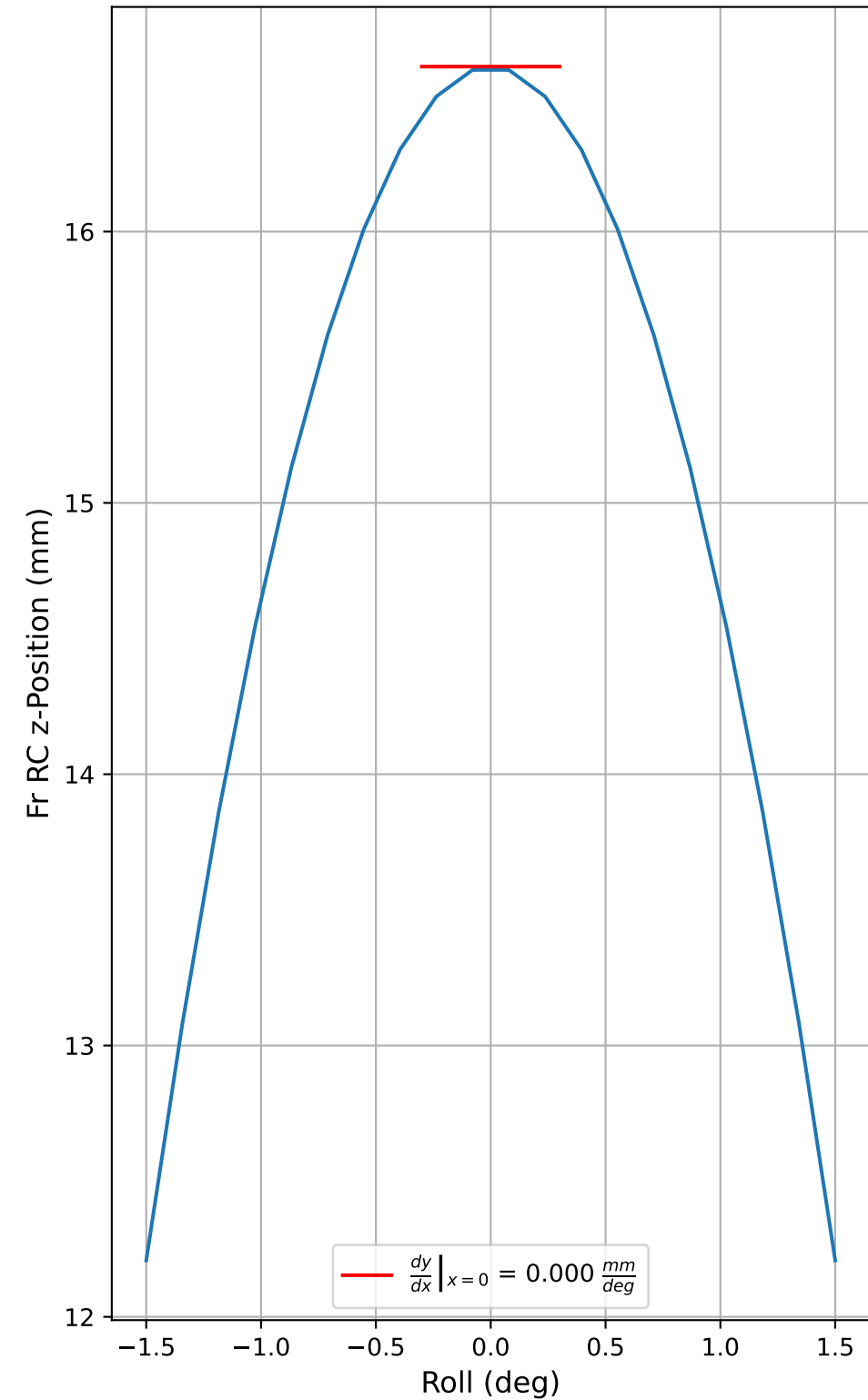
Rr Roll RC y-Migration



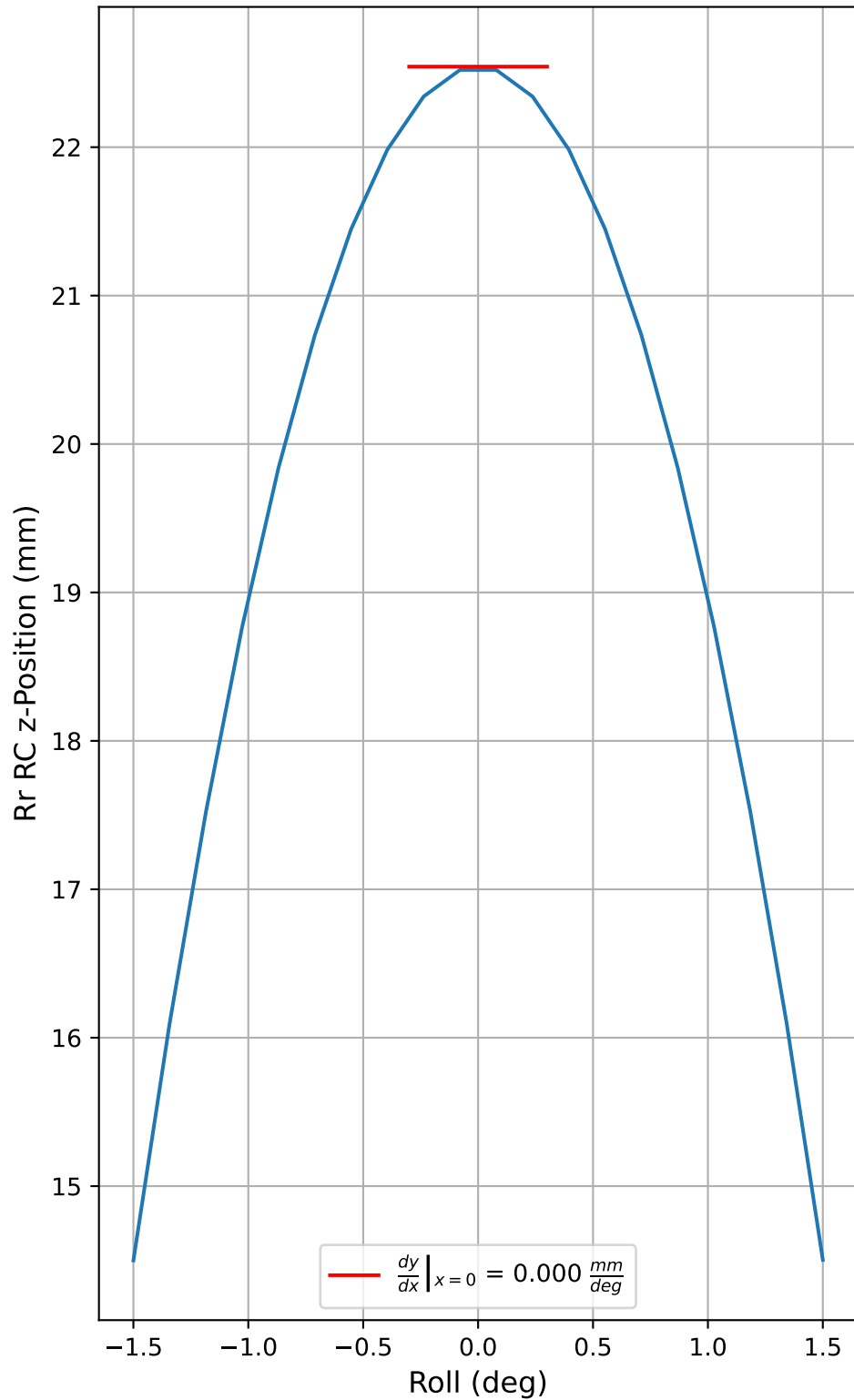
Linear Fit		$f(x) = a_1x + a_0$
Fr		$f(x) = 211.182x + -0.0$
Rr		$f(x) = 244.409x + 0.0$

Cubic Fit		$f(x) = a_3x^3 + a_2x^2 + a_1x + a_0$
Fr		$f(x) = -0.387x^3 + -0.0x^2 + 211.182x + 0.0$
Rr		$f(x) = -0.442x^3 + -0.0x^2 + 244.409x + 0.0$

Fr Roll RC z-Migration



Rr Roll RC z-Migration



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		$f(x) = 0.0x^3 + -1.956x^2 + -0.0x + 16.606$
Rr		$f(x) = 0.001x^3 + -3.575x^2 + -0.0x + 22.54$