Quasi-Steady-State Report

Simulation Author: Robert Horvath

Generated By: Robert (roberthorvath5@gmail.com)

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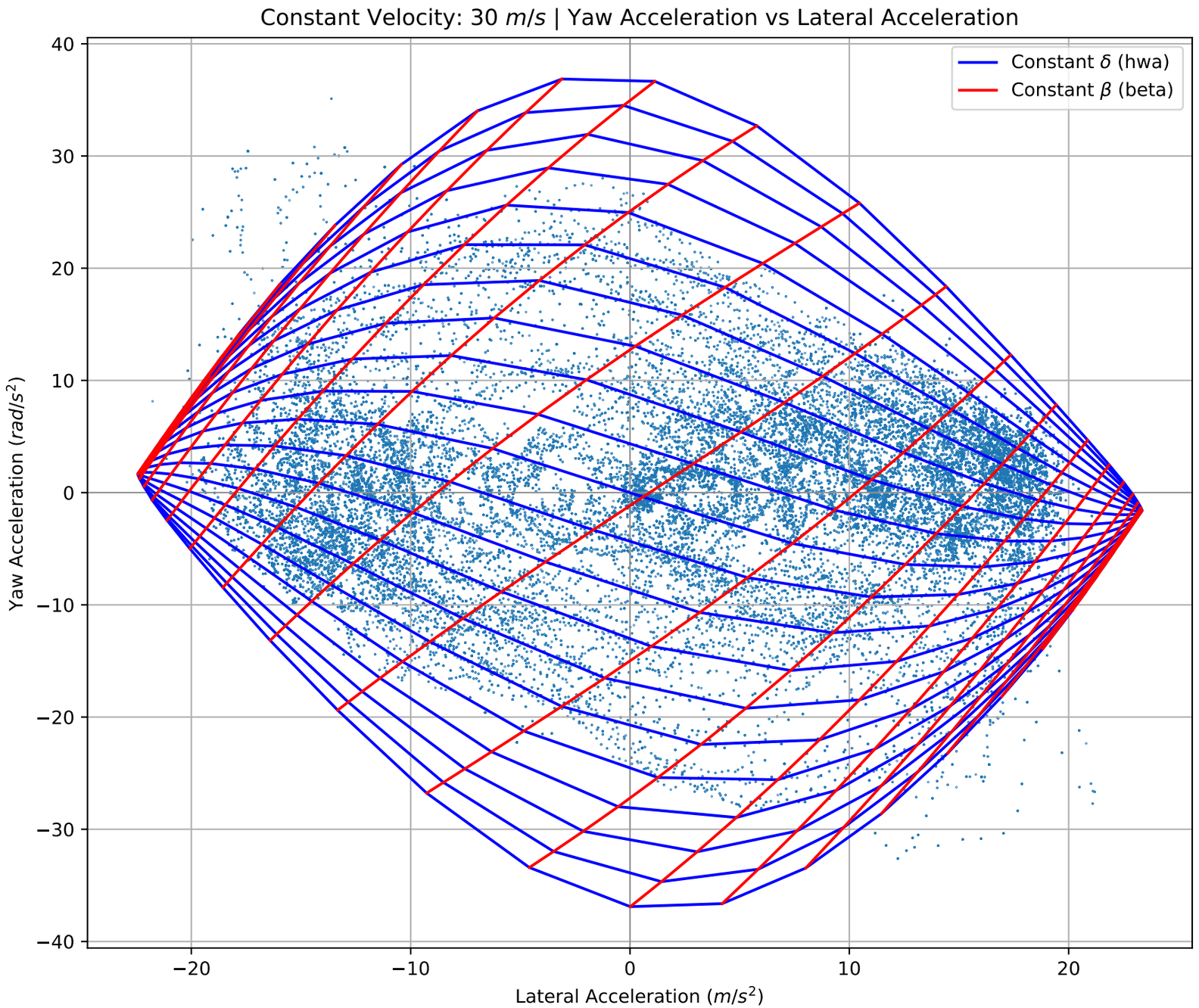
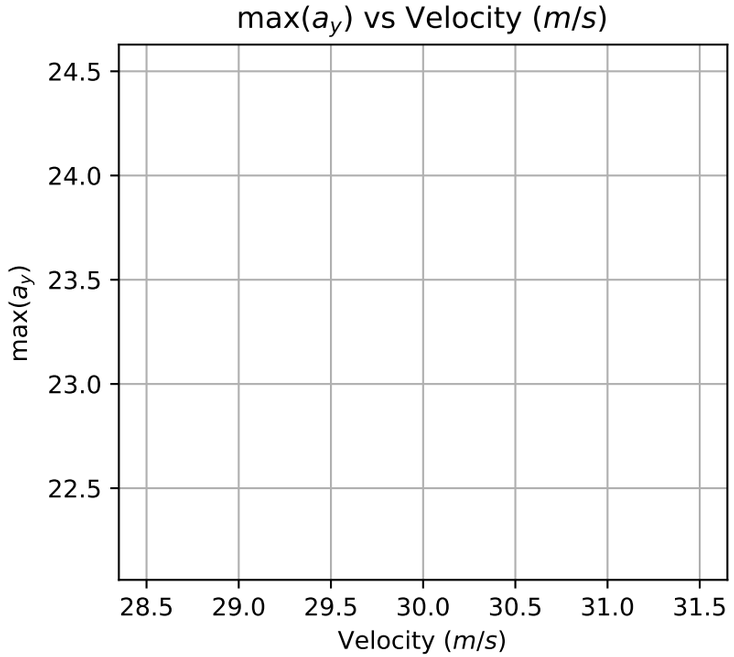
Note 1: The variable δ always refers to the average heading angle of the front tires

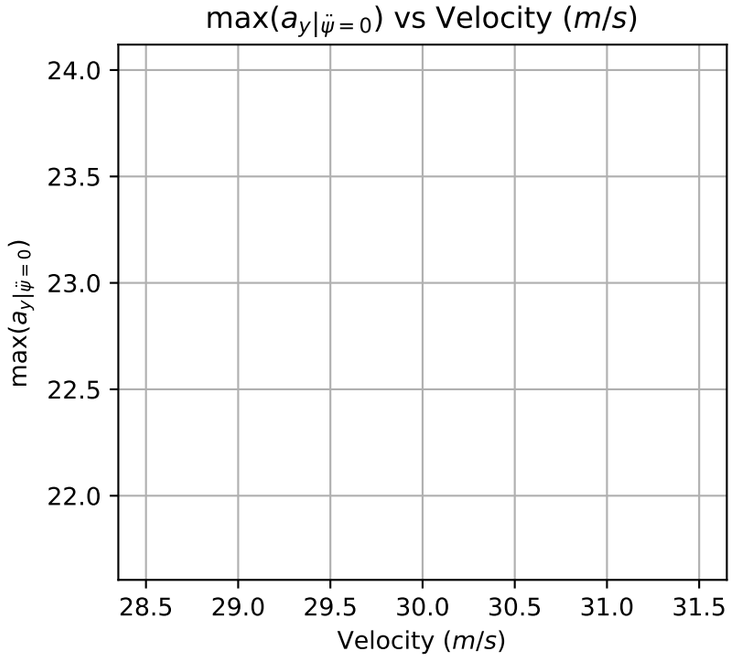
Correlation Dataset

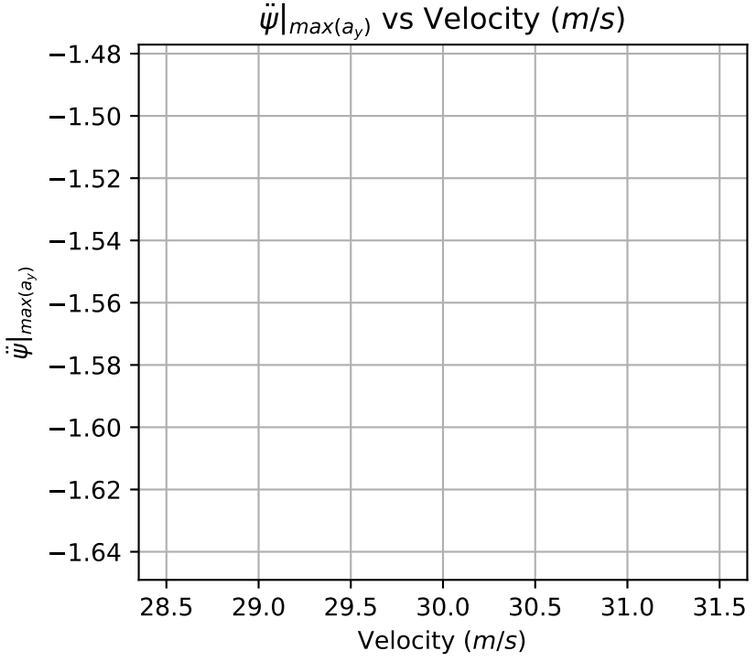


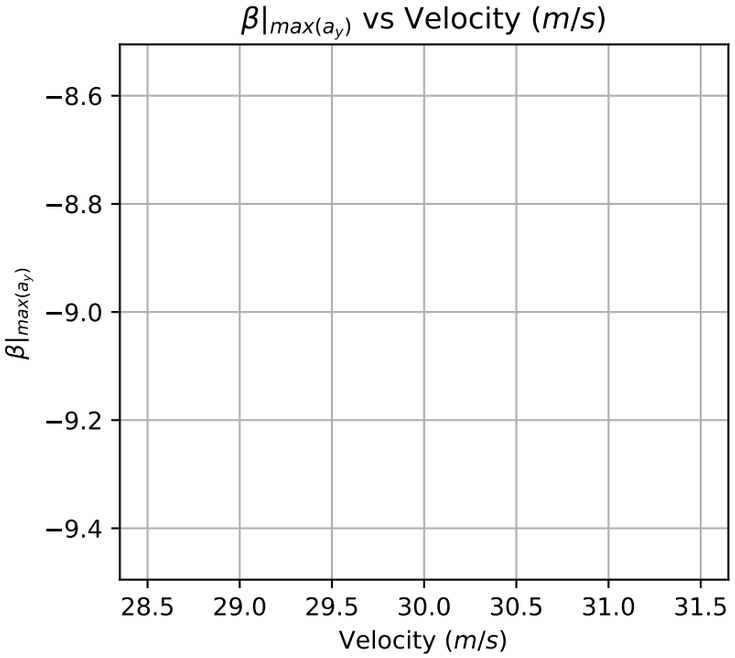
		Left Half	Right Half
$\max(a_y)$	(m/s^2)	-22.444	23.344
$\max(a_{y\|\ddot{\psi}=0})$	(m/s^2)	-21.994	22.862
$\ddot{\psi}\|_{max(a_y)}$	(rad/s^2)	1.601	-1.563
$\beta\|_{max(a_y)}$	(deg)	8.000	-9.000
$\delta\|_{max(a_y)}$	(deg)	-12.500	15.000
$\max(\ddot{\psi})$	(rad/s^2)	-36.897	36.863
$\beta\|_{max(\ddot{\psi})}$	(deg)	-3.000	4.000
$\delta\|_{max(\ddot{\psi})}$	(deg)	-25.000	25.000
$a_y\|_{max(\ddot{\psi})}$	(m/s^2)	0.013	-3.104
$\frac{d\ddot{\psi}}{d\delta}\Big\|_{max(a_y)}$	$\left(\frac{rad/s^2}{deg}\right)$	0.020	0.022
$\frac{d\ddot{\psi}}{d\beta}\Big\|_{max(a_y)}$	$\left(\frac{rad/s^2}{deg}\right)$	0.207	0.125
$\frac{d\ddot{\psi}}{d\delta}\Big\|_{\beta=0}$	$\left(\frac{rad/s^2}{deg}\right)$		4.615
$\frac{d\ddot{\psi}}{d\beta}\Big\|_{\delta=0}$	$\left(\frac{rad/s^2}{deg}\right)$		4.720

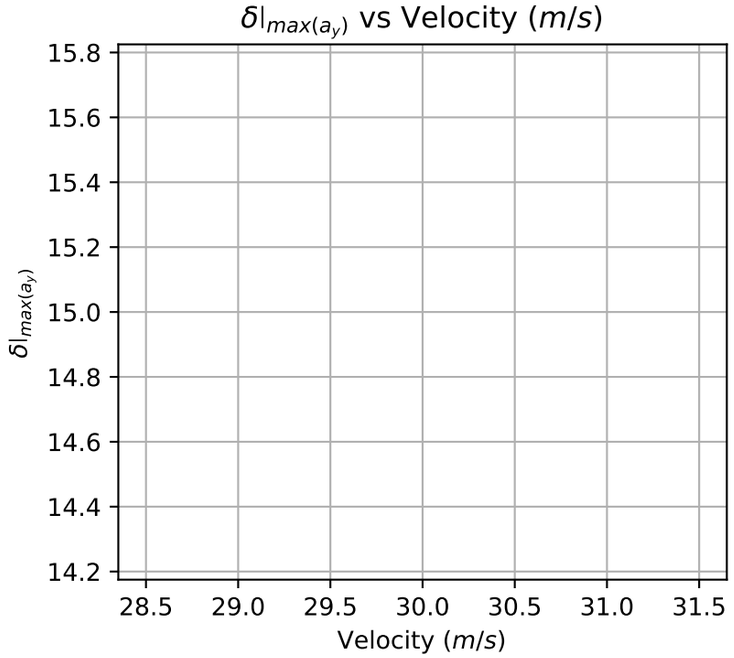
Appendix

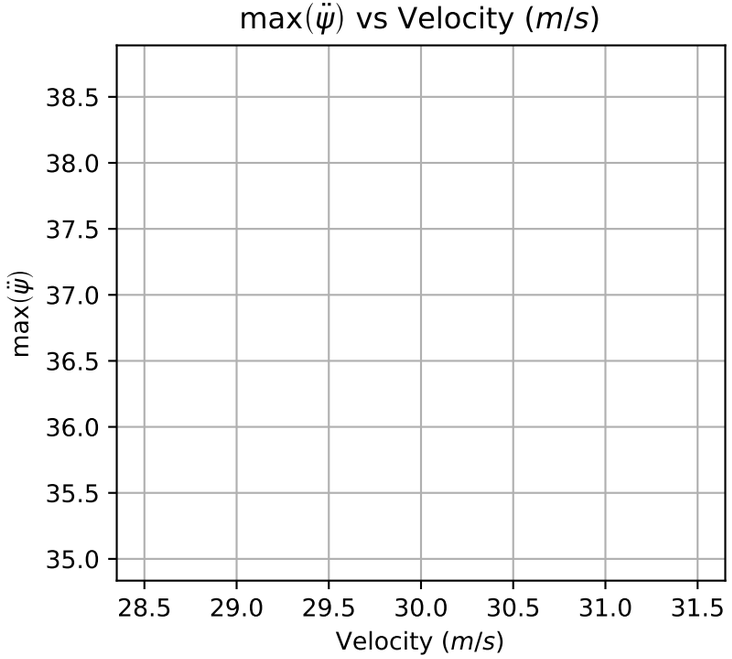

max(a_y) vs Velocity (m/s)
max(a_y)
24.5
24.0
23.5
23.0
22.5
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

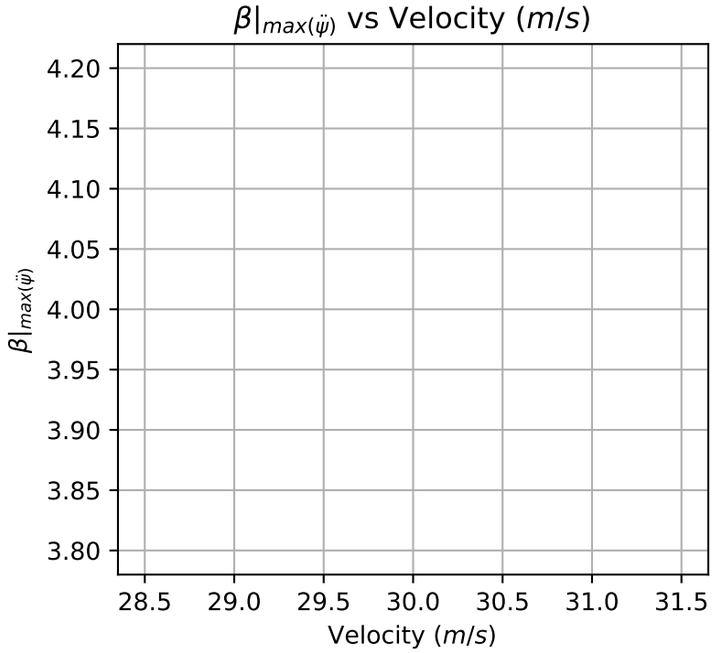

max($a_{y|\ddot{\psi}=0}$) vs Velocity (m/s)
max($a_{y|\ddot{\psi}=0}$)
24.0
23.5
23.0
22.5
22.0
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

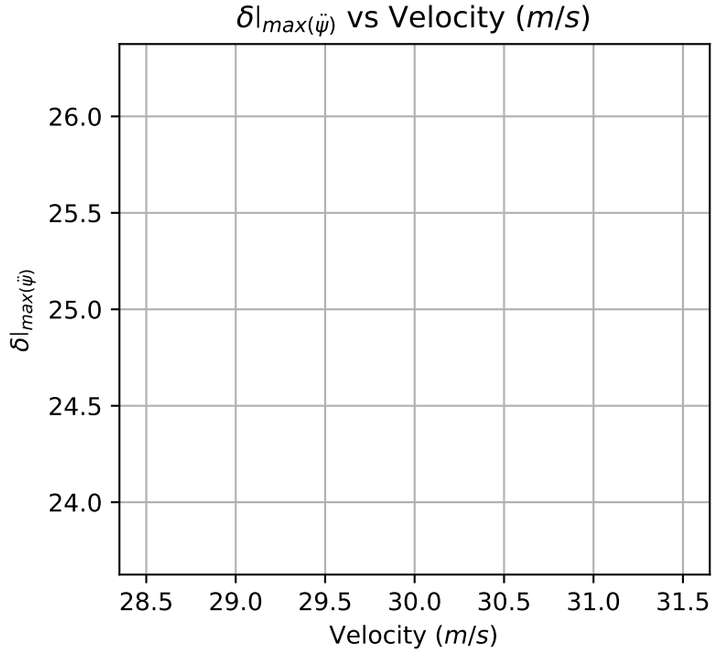

$\ddot{\psi}|_{max(a_y)}$ vs Velocity (m/s)
$\ddot{\psi}|_{max(a_y)}$
−1.48
−1.50
−1.52
−1.54
−1.56
−1.58
−1.60
−1.62
−1.64
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

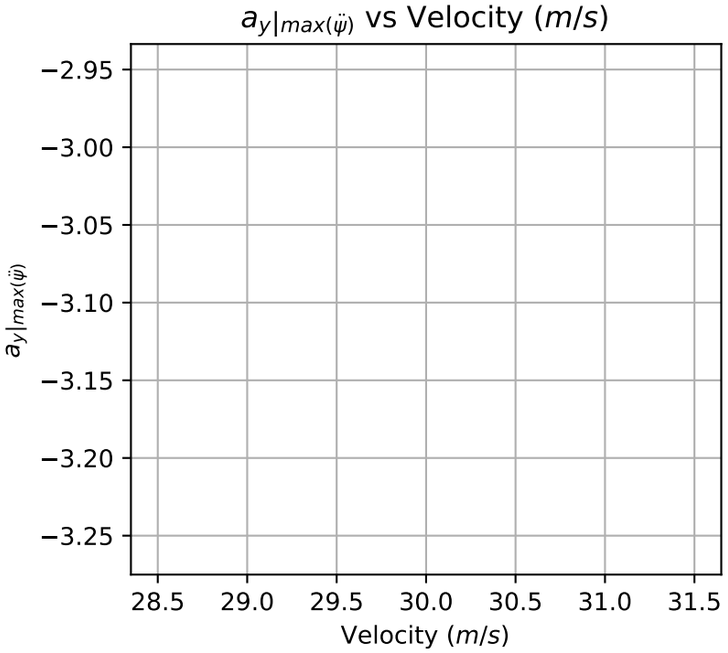

$\beta|_{max(a_y)}$ vs Velocity (m/s)
$\beta|_{max(a_y)}$
−8.6
−8.8
−9.0
−9.2
−9.4
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

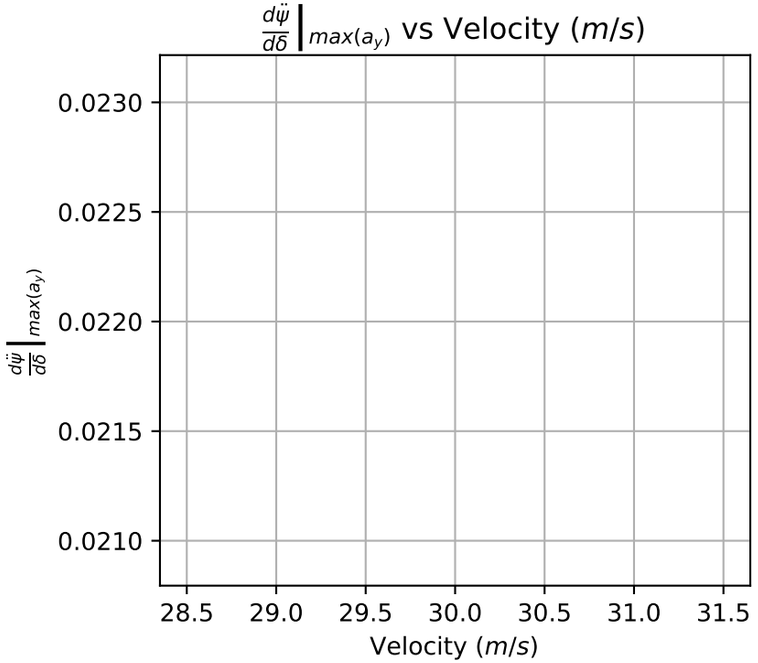

$\delta|_{max(a_y)}$ vs Velocity (m/s)
$\delta|_{max(a_y)}$
15.8
15.6
15.4
15.2
15.0
14.8
14.6
14.4
14.2
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

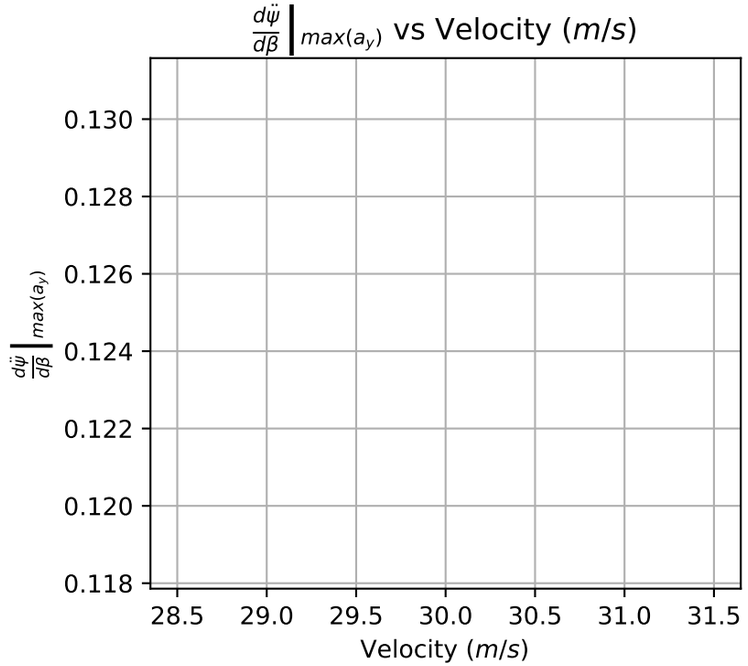

max($\ddot{\psi}$) vs Velocity (m/s)
max($\ddot{\psi}$)
38.5
38.0
37.5
37.0
36.5
36.0
35.5
35.0
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

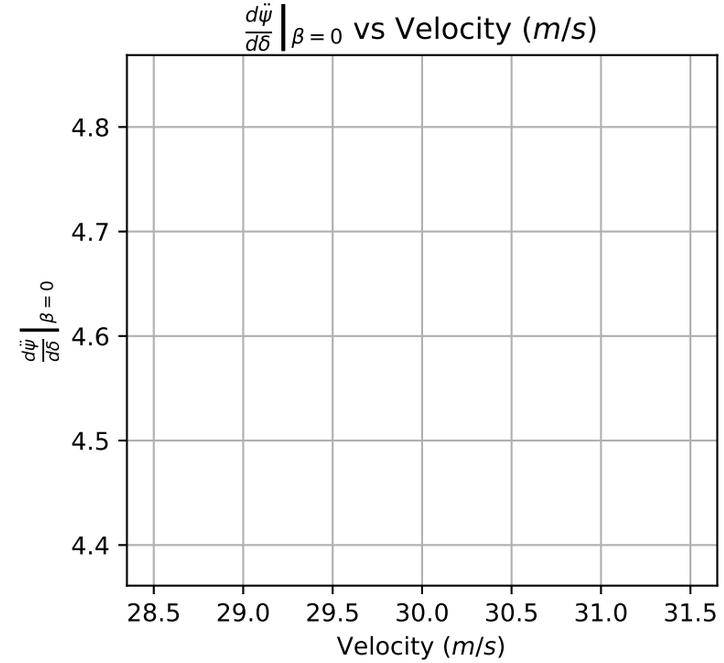

$\beta|_{max(\ddot{\psi})}$ vs Velocity (m/s)
$\beta|_{max(\ddot{\psi})}$
4.20
4.15
4.10
4.05
4.00
3.95
3.90
3.85
3.80
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

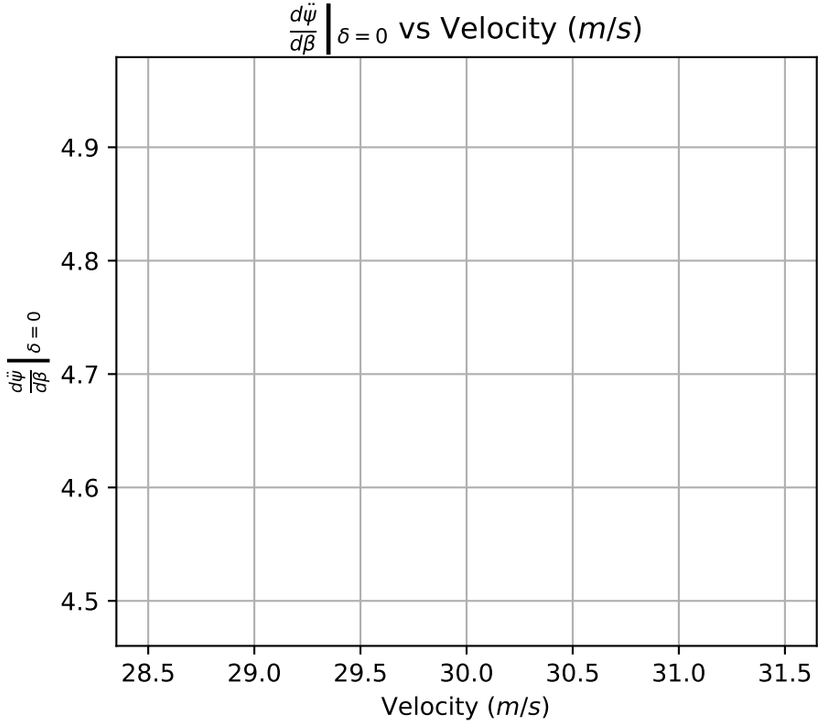

$\delta|_{max(\ddot{\psi})}$ vs Velocity (m/s)
$\delta|_{max(\ddot{\psi})}$
26.0
25.5
25.0
24.5
24.0
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)

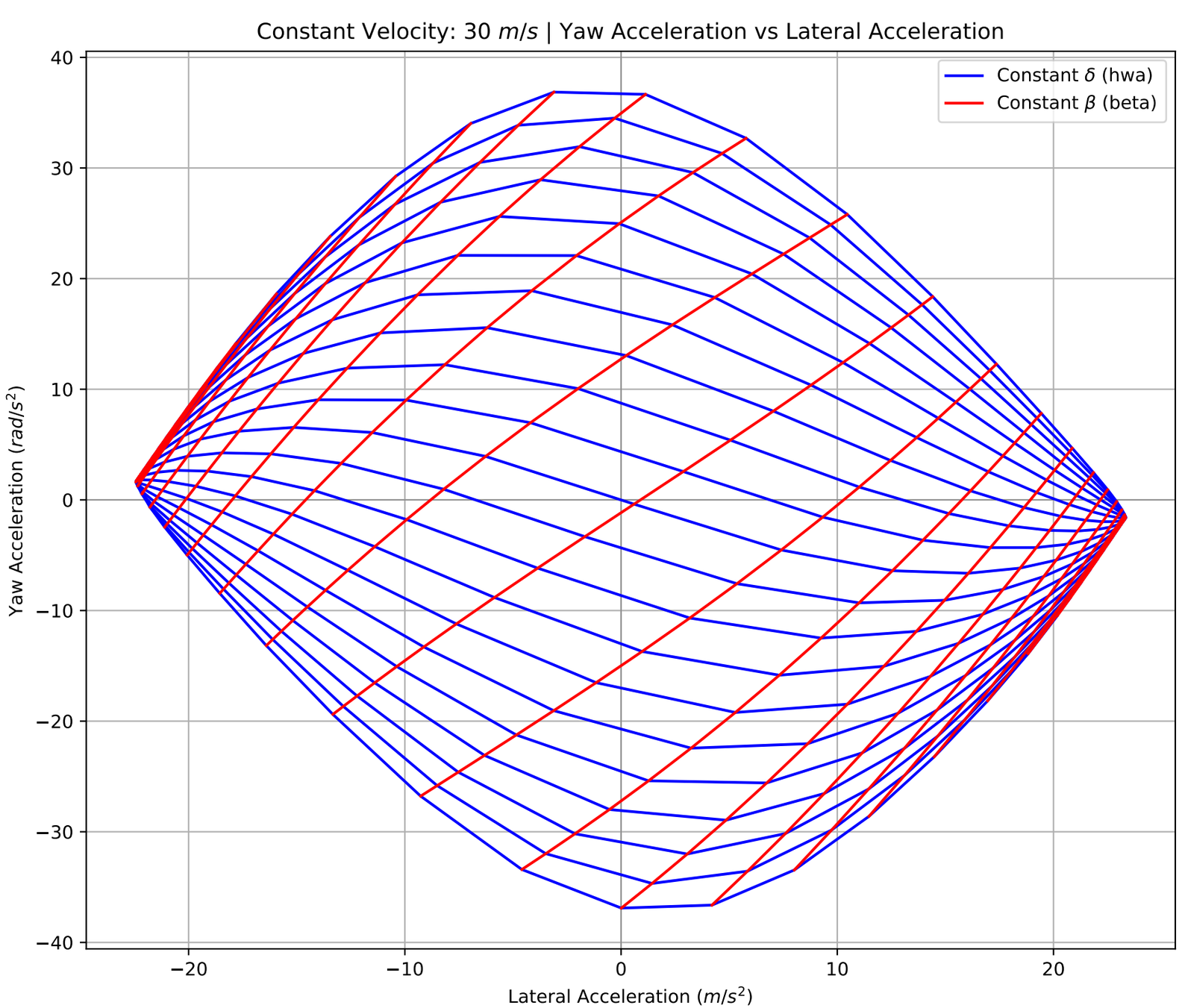

$a_y|_{max(\ddot{\psi})}$ vs Velocity (m/s)
$a_y|_{max(\ddot{\psi})}$
−2.95
−3.00
−3.05
−3.10
−3.15
−3.20
−3.25
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)


$\frac{d\ddot{\psi}}{d\delta}\Big|_{max(a_y)}$ vs Velocity (m/s)
$\frac{d\ddot{\psi}}{d\delta}\Big|_{max(a_y)}$
0.0230
0.0225
0.0220
0.0215
0.0210
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)


$\frac{d\ddot{\psi}}{d\beta}\Big|_{max(a_y)}$ vs Velocity (m/s)
$\frac{d\ddot{\psi}}{d\beta}\Big|_{max(a_y)}$
0.130
0.128
0.126
0.124
0.122
0.120
0.118
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)


$\frac{d\ddot{\psi}}{d\delta}\Big|_{\beta=0}$ vs Velocity (m/s)
$\frac{d\ddot{\psi}}{d\delta}\Big|_{\beta=0}$
4.8
4.7
4.6
4.5
4.4
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)


$\frac{d\ddot{\psi}}{d\beta}\Big|_{\delta=0}$ vs Velocity (m/s)
$\frac{d\ddot{\psi}}{d\beta}\Big|_{\delta=0}$
4.9
4.8
4.7
4.6
4.5
28.5
29.0
29.5
30.0
30.5
31.0
31.5
Velocity (m/s)



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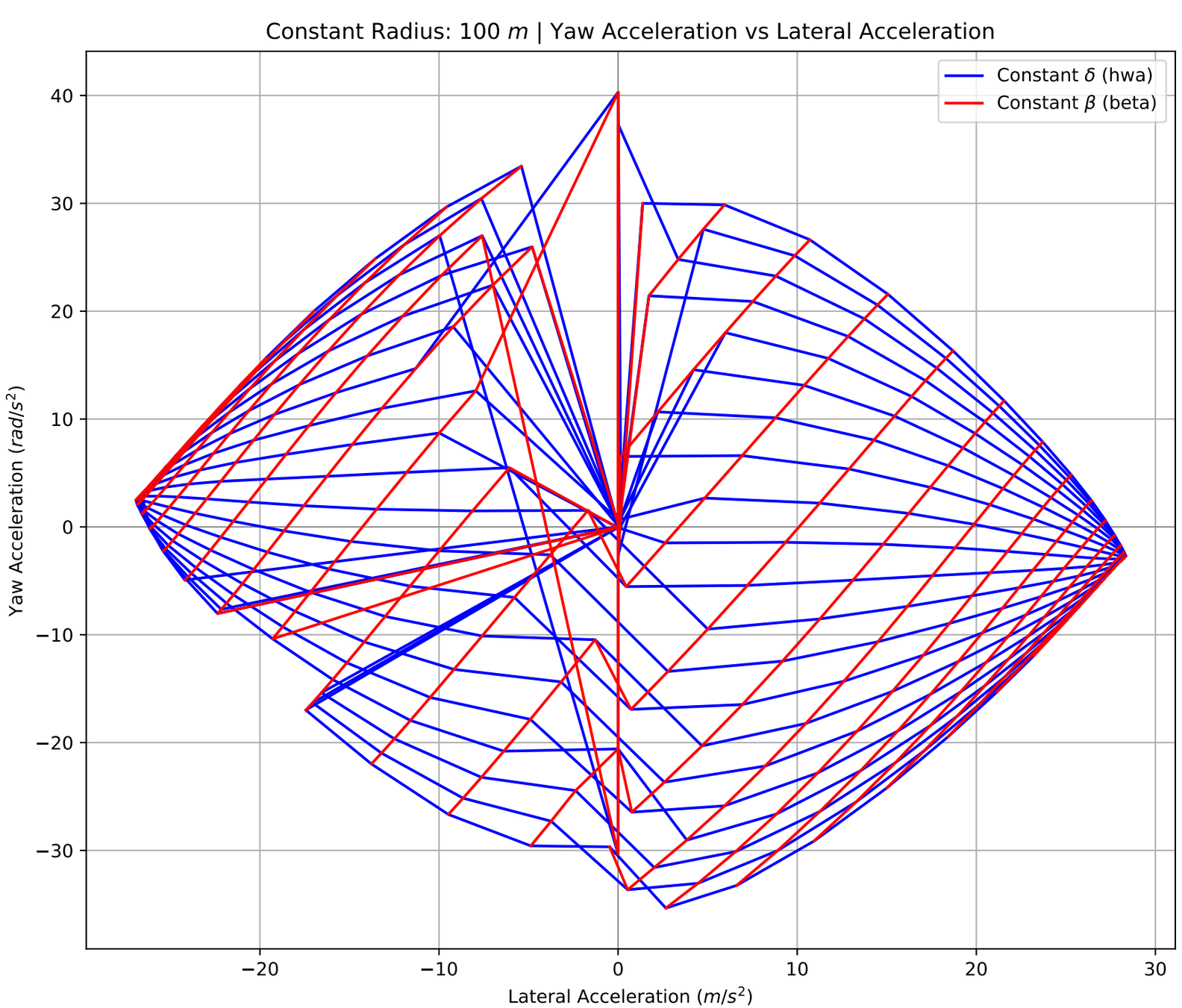
$\frac{d\ddot{\psi}}{d\beta}\Big\|_{max(a_y)}$	$\left(\frac{rad/s^2}{deg}\right)$	0.207	0.125
$\frac{d\ddot{\psi}}{d\delta}\Big\|_{\beta=0}$	$\left(\frac{rad/s^2}{deg}\right)$		4.615
$\frac{d\ddot{\psi}}{d\beta}\Big\|_{\delta=0}$	$\left(\frac{rad/s^2}{deg}\right)$		4.720



		Left Half	Right Half
$\max(a_y)$	(m/s^2)	-26.930	28.348
$\max(a_{y\|\ddot{\psi}=0})$	(m/s^2)	-26.208	27.433
$\ddot{\psi}\|_{max(a_y)}$	(rad/s^2)	2.479	-2.675
$\beta\|_{max(a_y)}$	(deg)	9.000	-10.000
$\delta\|_{max(a_y)}$	(deg)	-10.000	10.000
$\max(\ddot{\psi})$	(rad/s^2)	-35.345	40.315
$\beta\|_{max(\ddot{\psi})}$	(deg)	-4.000	2.000
$\delta\|_{max(\ddot{\psi})}$	(deg)	-25.000	7.500
$a_y\|_{max(\ddot{\psi})}$	(m/s^2)	2.668	0.006
$\frac{d\ddot{\psi}}{d\delta}\Big\|_{max(a_y)}$	$\left(\frac{rad/s^2}{deg}\right)$	-0.043	0.016
$\frac{d\ddot{\psi}}{d\beta}\Big\|_{max(a_y)}$	$\left(\frac{rad/s^2}{deg}\right)$	0.305	0.223
$\frac{d\ddot{\psi}}{d\delta}\Big\|_{\beta=0}$	$\left(\frac{rad/s^2}{deg}\right)$		-4.718
$\frac{d\ddot{\psi}}{d\beta}\Big\|_{\delta=0}$	$\left(\frac{rad/s^2}{deg}\right)$		7.049