

Dassault Mirage 2000-5 Aerodynamic data built from vspaero; CG (8.56, 0, 0.5)M, 2020-01-15 03:32

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AeroDetail=Full, ExternalTanks, Flaps, Gear, GroundEffect, Mach, Variable Wing Geometry, WakeIterations=3

Model summary

Dependent variable	Independent variables	Axis	Description
CFXB	alpha	DRAG	BASIC DRAG
CFXDED1L	alpha,beta,DED1L	DRAG	DRAG DUE TO ELEVON 1L
CFXDED1R	alpha,beta,DED1R	DRAG	DRAG DUE TO ELEVON 1R
CFXDED2L	alpha,beta,DED2L	DRAG	DRAG DUE TO ELEVON 2L
CFXDED2R	alpha,beta,DED2R	DRAG	DRAG DUE TO ELEVON 2R
CFXDSD1L	alpha	DRAG	DRAG DUE TO LE SLAT 1
CFXDSD2L	alpha	DRAG	DRAG DUE TO LE SLAT 2
CFXDSDL	alpha	DRAG	DRAG DUE TO LOWER SPEEDBRAKE DEFLECTION
CFXmn	mach,alpha	DRAG	DRAG DUE TO MACH
CFXDSDL	alpha	DRAG	DRAG DUE TO UPPER SPEEDBRAKE DEFLECTION
CFXCTNK	alpha,beta	DRAG	DRAG INCREMENT DUE TO CENTRE TANK
CFXGEAR	alpha	DRAG	DRAG INCREMENT DUE TO GEAR
CFXLTK	alpha,beta	DRAG	DRAG INCREMENT DUE TO LEFT WING TANK
CFXRTNK	alpha,beta	DRAG	DRAG INCREMENT DUE TO RIGHT WING TANK
CFZB	alpha	LIFT	BASIC LIFT
CFZDED1L	alpha,beta,DED1L	LIFT	LIFT DUE TO ELEVON 1L
CFZDED1R	alpha,beta,DED1R	LIFT	LIFT DUE TO ELEVON 1R
CFZDE2L	alpha,beta,DED2L	LIFT	LIFT DUE TO ELEVON 2L
CFZDE2R	alpha,beta,DED2R	LIFT	LIFT DUE TO ELEVON 2R
CFZDSD1L	alpha	LIFT	LIFT DUE TO LE SLAT 1
CFZDSD2L	alpha	LIFT	LIFT DUE TO LE SLAT 2
CFZDEL	alpha	LIFT	LIFT DUE TO LOWER SPEEDBRAKE DEFLECTION
CFZmn	mach,alpha	LIFT	LIFT DUE TO MACH
CFZDSDL	alpha	LIFT	LIFT DUE TO UPPER SPEEDBRAKE DEFLECTION
CFZCTNK	alpha,beta	LIFT	LIFT INCREMENT DUE TO CENTRE TANK
CFZGEAR	alpha	LIFT	LIFT INCREMENT DUE TO GEAR
CFZLTK	alpha,beta	LIFT	LIFT INCREMENT DUE TO LEFT WING TANK
CFZRTNK	alpha,beta	LIFT	LIFT INCREMENT DUE TO RIGHT WING TANK
CMM1	alpha	PITCH	BASIC PITCHING MOMENT
CMMQ	alpha	PITCH	PITCH DAMPING DERIVATIVE

CMMmnw	mach,alpha	PITCH	PITCH DUE TO MACH
CMMDED1L	alpha,beta,DED1L	PITCH	PITCH MOMENT DUE TO ELEVON 1L
CMMDED1R	alpha,beta,DED1R	PITCH	PITCH MOMENT DUE TO ELEVON 1R
CMMDED2L	alpha,beta,DED2L	PITCH	PITCH MOMENT DUE TO ELEVON 2L
CMMDED2R	alpha,beta,DED2R	PITCH	PITCH MOMENT DUE TO ELEVON 2R
CMMDS1L	alpha	PITCH	PITCH MOMENT DUE TO LE SLAT 1
CMMDS2L	alpha	PITCH	PITCH MOMENT DUE TO LE SLAT 2
CMMDSBL	alpha	PITCH	PITCH MOMENT DUE TO LOWER SPEEDBRAKE DEFLECTION
CMMDSBU	alpha	PITCH	PITCH MOMENT DUE TO UPPER SPEEDBRAKE DEFLECTION
CMMCTNK	alpha,beta	PITCH	PITCHING MOMENT INCREMENT DUE TO CENTRE TANK
CMMGEAR	alpha	PITCH	PITCHING MOMENT INCREMENT DUE TO GEAR
CMLLTNK	alpha,beta	PITCH	PITCHING MOMENT INCREMENT DUE TO LEFT WING TANK
CMMRTNK	alpha,beta	PITCH	PITCHING MOMENT INCREMENT DUE TO RIGHT WING TANK
CML1	alpha,beta	ROLL	BASIC ROLLING MOMENT
CMLP	alpha	ROLL	ROLL DAMPING DERIVATIVE
CMLmnw	mach,alpha	ROLL	ROLL DUE TO MACH
CMLDED1L	alpha,beta,DED1L	ROLL	ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION
CMLDED1R	alpha,beta,DED1R	ROLL	ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION
CMLDED2L	alpha,beta,DED2L	ROLL	ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION
CMLDED2R	alpha,beta,DED2R	ROLL	ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION
CMLDRD	alpha,beta,DRD	ROLL	ROLLING MOMENT DUE TO RUDDER DEFLECTION
CMLR	alpha	ROLL	ROLLING MOMENT DUE TO YAW RATE
CMLCTNK	alpha,beta	ROLL	ROLLING MOMENT INCREMENT DUE TO CENTRE TANK
CMLGEAR	alpha	ROLL	ROLLING MOMENT INCREMENT DUE TO GEAR
CMLLTNK	alpha,beta	ROLL	ROLLING MOMENT INCREMENT DUE TO LEFT WING TANK
CMRRTNK	alpha,beta	ROLL	ROLLING MOMENT INCREMENT DUE TO RIGHT WING TANK
CFYB	alpha,beta	SIDE	BASIC SIDE FORCE
CFYDED1L	alpha,beta,DED1L	SIDE	SIDE FORCE DUE TO ELEVON 1L DEFLECTION
CFYDED1R	alpha,beta,DED1R	SIDE	SIDE FORCE DUE TO ELEVON 1R DEFLECTION
CFYDED2L	alpha,beta,DED2L	SIDE	SIDE FORCE DUE TO ELEVON 2L DEFLECTION
CFYDED2R	alpha,beta,DED2R	SIDE	SIDE FORCE DUE TO ELEVON 2R DEFLECTION
CFYP	alpha	SIDE	SIDE FORCE DUE TO ROLL RATE
CFYDRD	alpha,beta,DRD	SIDE	SIDE FORCE DUE TO RUDDER DEFLECTION
CFYR	alpha	SIDE	SIDE FORCE DUE TO YAW RATE
CFYCTNK	alpha,beta	SIDE	SIDE FORCE INCREMENT DUE TO CENTRE TANK
CFYGEAR	alpha	SIDE	SIDE FORCE INCREMENT DUE TO GEAR
CFYLTNK	alpha,beta	SIDE	SIDE FORCE INCREMENT DUE TO LEFT WING TANK
CFYRTNK	alpha,beta	SIDE	SIDE FORCE INCREMENT DUE TO RIGHT WING TANK

CMN1	alpha,beta	YAW	BASIC YAW ING MOMENT
CMNR	alpha	YAW	YAW DAMPING DERIVATIVE
CMNDED1L	alpha,beta,DED1L	YAW	YAW MOMENT DUE TO ELEVON 1L
CMNDED1R	alpha,beta,DED1R	YAW	YAW MOMENT DUE TO ELEVON 1R
CMNDED2L	alpha,beta,DED2L	YAW	YAW MOMENT DUE TO ELEVON 2L
CMNDED2R	alpha,beta,DED2R	YAW	YAW MOMENT DUE TO ELEVON 2R
CMNP	alpha	YAW	YAW ING MOMENT DUE TO ROLL RATE
CMNDRDr	alpha,beta,DRD	YAW	YAW ING MOMENT DUE TO RUDDER DEFLECTION
CMNCTNK	alpha,beta	YAW	YAW ING MOMENT INCREMENT DUE TO CENTRE TANK
CMNGEAR	alpha	YAW	YAW ING MOMENT INCREMENT DUE TO GEAR
CMNLTNK	alpha,beta	YAW	YAW ING MOMENT INCREMENT DUE TO LEFT WING TANK
CMNR TNK	alpha,beta	YAW	YAW ING MOMENT INCREMENT DUE TO RIGHT WING TANK

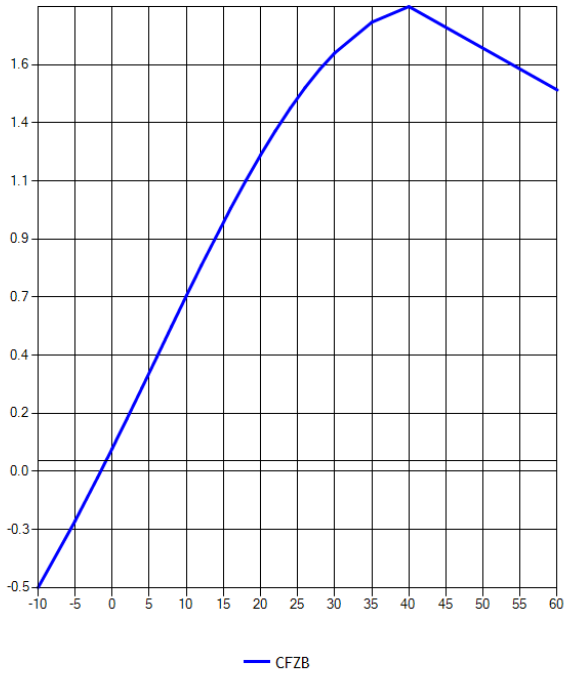
Coefficient Buildup

Axis	Buildup
DRAG	CFXDSD1L*DSD1L + CFXDSD2L*DSD2L + CFXDSBU*DSBU + CFXDSBL*DSBL + CFXGEAR*gear + CFXCTNK*metrics/stores-centre-tank + CFXLTNK*metrics/stores-wing-tank-left + CFXRTNK*metrics/stores-wing-tank-right + CFXB + CFXDED1L + CFXDED1R + CFXDED2L + CFXDED2R + CFXmn
LIFT	CFZDSD1L*DSD1L + CFZDSD2L*DSD2L + CFZDSBU*DSBU + CFZDEL*DSBL + CFZGEAR*gear + CFZCTNK*metrics/stores-centre-tank + CFZLTNK*metrics/stores-wing-tank-left + CFZRTNK*metrics/stores-wing-tank-right + CFZB + CFZDED1L + CFZDED1R + CFZDE2L + CFZDE2R + CFZmn
PITCH	CMMDSD1L*DSD1L + CMMDSD2L*DSD2L + CMMDSBU*DSBU + CMMDSBL*DSBL + CMMGEAR*gear + CMMCTNK*metrics/stores-centre-tank + CMMLTNK*metrics/stores-wing-tank-left + CMMRTNK*metrics/stores-wing-tank-right + CMM1 + CMMQ*QB + CMMDED1L + CMMDED1R + CMMDED2L + CMMDED2R + CMMmnw
SIDE	CFYGEAR*gear + CFYCTNK*metrics/stores-centre-tank + CFYLTNK*metrics/stores-wing-tank-left + CFYRTNK*metrics/stores-wing-tank-right + CFYB + CFYDED1L + CFYDED1R + CFYDED2L + CFYDED2R + CFYDRD + CFYP*PB + CFYR*RB
ROLL	CMLGEAR*gear + CMLCTNK*metrics/stores-centre-tank + CMLLTNK*metrics/stores-wing-tank-left + CMRRTNK*metrics/stores-wing-tank-right + CML1 + CMLDED1L + CMLDED1R + CMLDED2L + CMLDED2R + CMLDRD + CMLP*PB + CMLR*RB + CMLmnw + (DLNB*BETA)
YAW	CMNGEAR*gear + CMNCTNK*metrics/stores-centre-tank + CMNLTNK*metrics/stores-wing-tank-left + CMNR TNK*metrics/stores-wing-tank-right + CMN1 + CMNDED1L + CMNDED1R + CMNDED2L + CMNDED2R + CMNDRDr + CMNP*PB + CMNR*RB + (DCNB*BETA)

LIFT

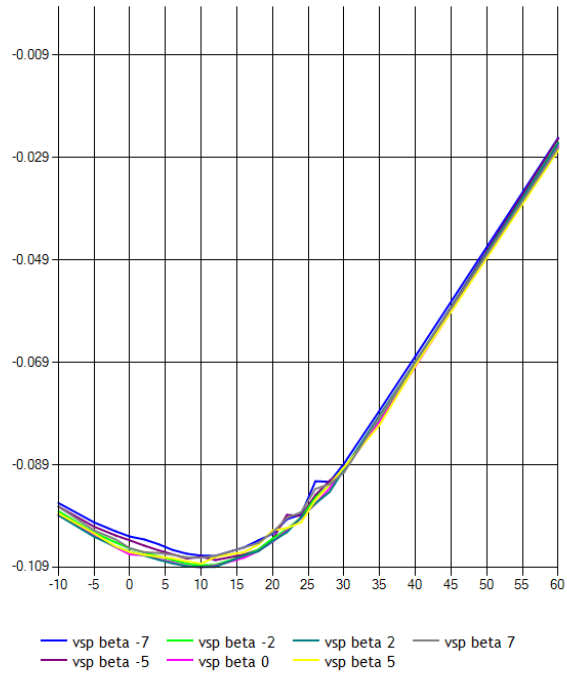
BASIC LIFT

CFZB(alpha)



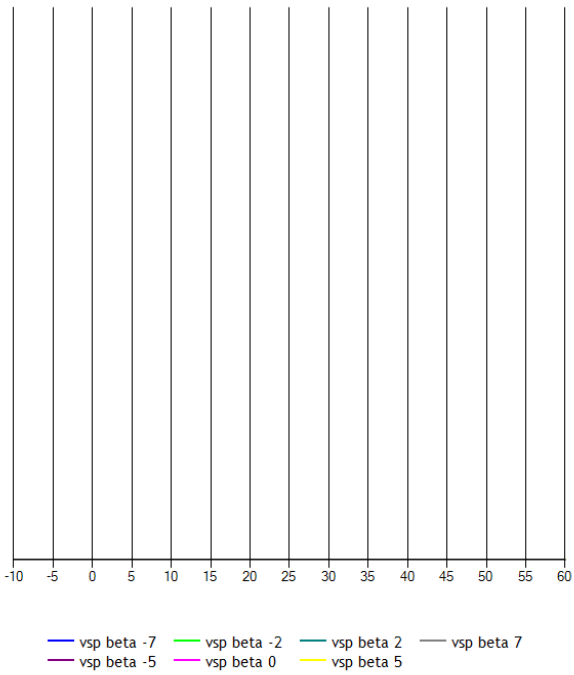
LIFT DUE TO ELEVON 1L

CFZDED1L (alpha,beta,DED1L=-16)



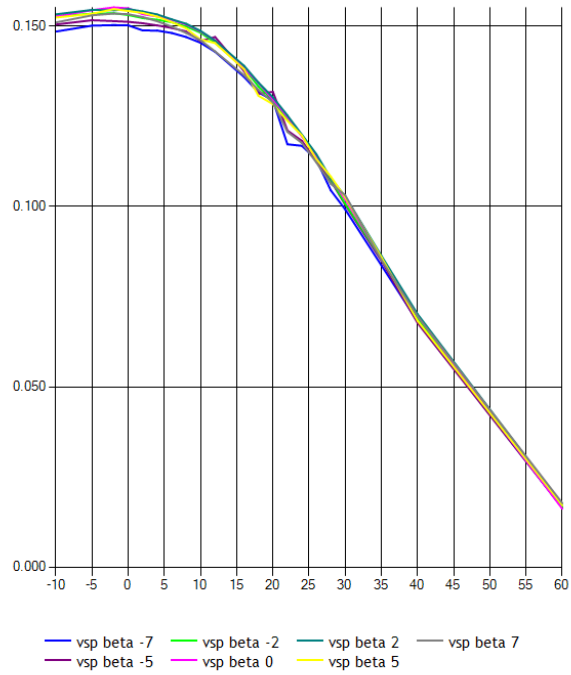
LIFT DUE TO ELEVON 1L

CFZDED1L (alpha,beta,DED1L=0)



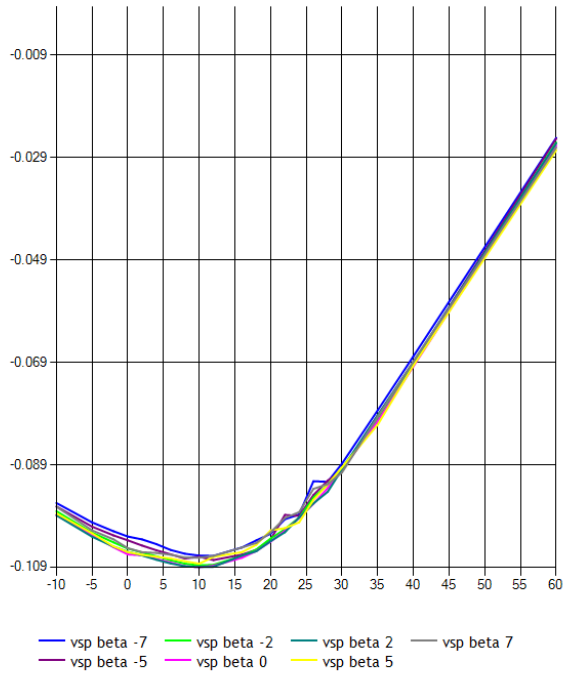
LIFT DUE TO ELEVON 1L

CFZDED1L (alpha,beta,DED1L=25)



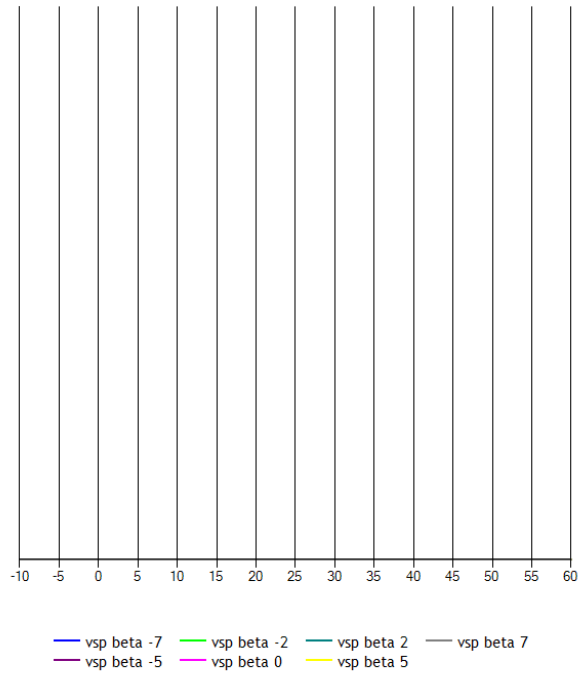
LIFT DUE TO ELEVON 1R

CFZDED1R (alpha,beta,DED1R=-16)



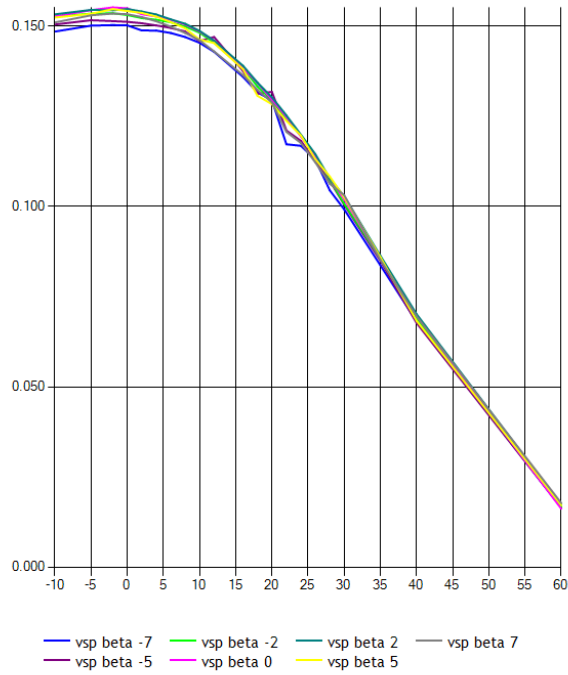
LIFT DUE TO ELEVON 1R

CFZDED1R (alpha,beta,DED1R=0)



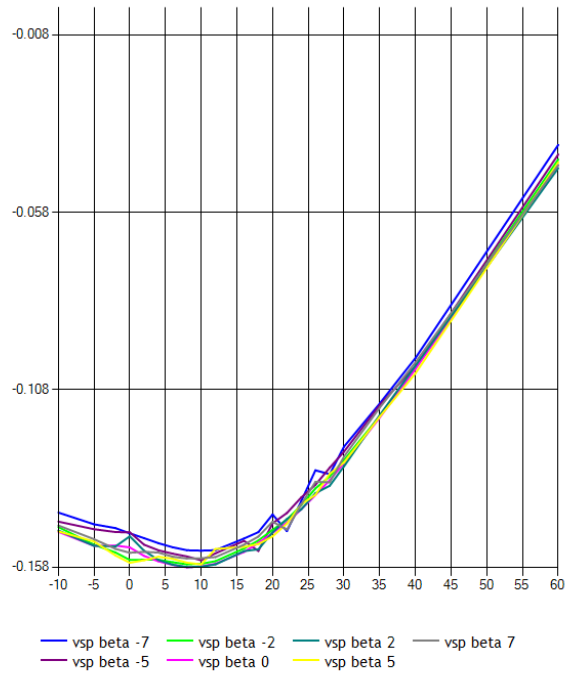
LIFT DUE TO ELEVON 1R

CFZDED1R (alpha,beta,DED1R=25)



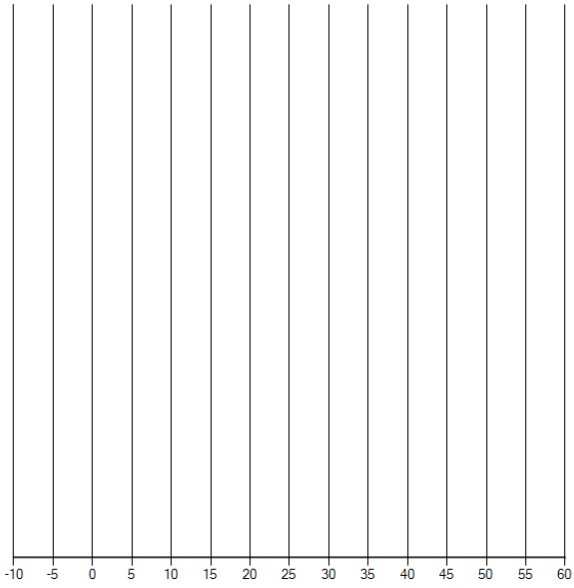
LIFT DUE TO ELEVON 2L

CFZDE2L (alpha,beta,DED2L=-16)



LIFT DUE TO ELEVON 2L

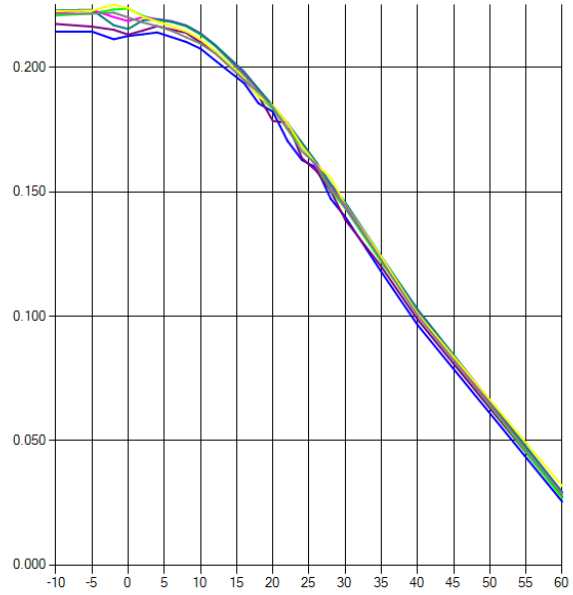
CFZDE2L (alpha,beta,DED2L=0)



vsp beta -7 vsp beta -5 vsp beta -2 vsp beta 0 vsp beta 2 vsp beta 5 vsp beta 7

LIFT DUE TO ELEVON 2L

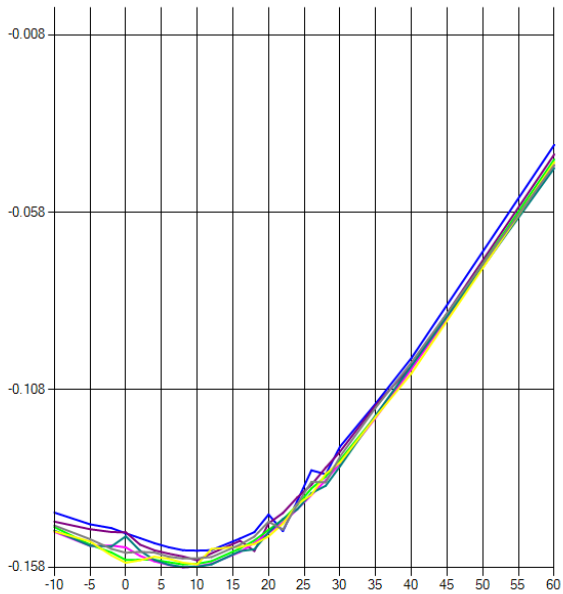
CFZDE2L (alpha,beta,DED2L=25)



vsp beta -7 vsp beta -5 vsp beta -2 vsp beta 0 vsp beta 2 vsp beta 5 vsp beta 7

LIFT DUE TO ELEVON 2R

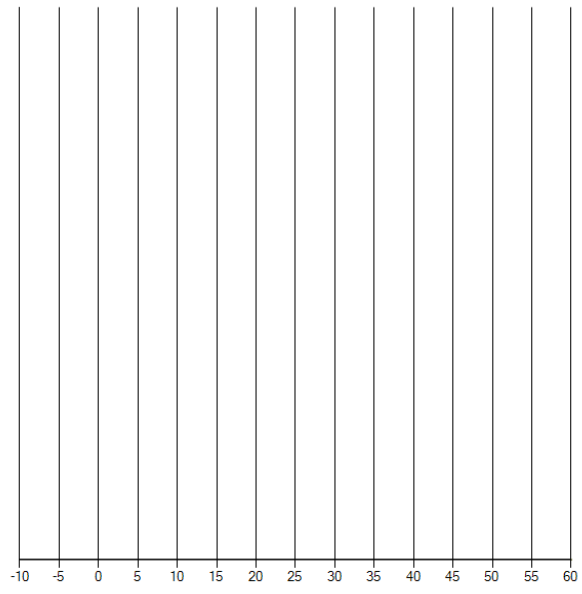
CFZDE2R (alpha,beta,DED2R=-16)



vsp beta -7 vsp beta -5 vsp beta -2 vsp beta 0 vsp beta 2 vsp beta 5 vsp beta 7

LIFT DUE TO ELEVON 2R

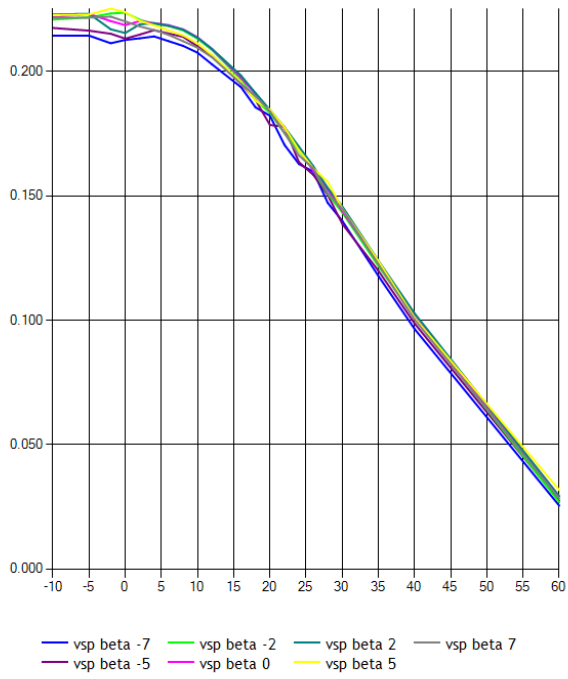
CFZDE2R (alpha,beta,DED2R=0)



vsp beta -7 vsp beta -5 vsp beta -2 vsp beta 0 vsp beta 2 vsp beta 5 vsp beta 7

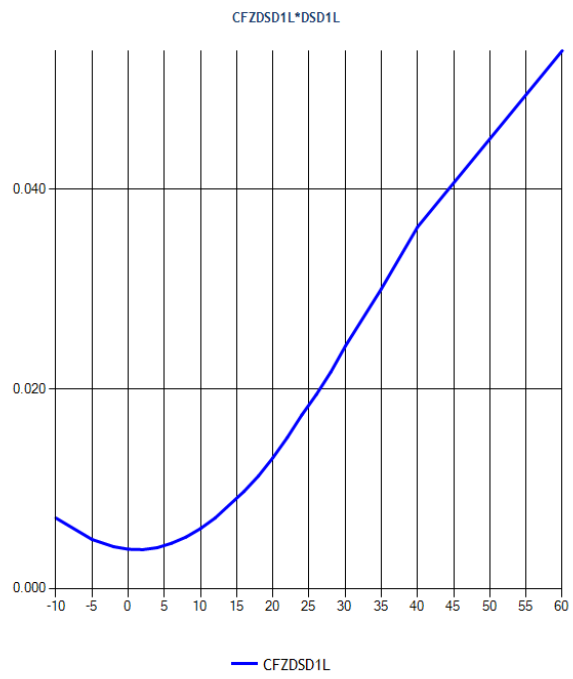
LIFT DUE TO ELEVON 2R

CFZDE2R (alpha,beta,DED2R=25)



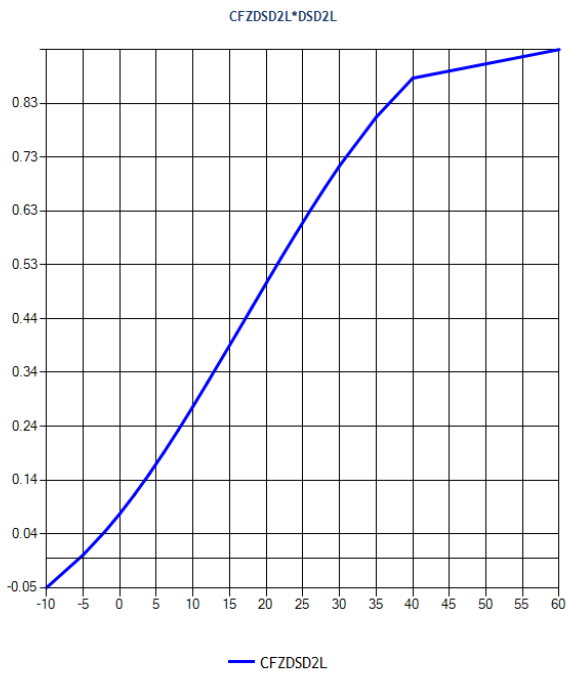
LIFT DUE TO LE SLAT 1

CFZDSD1L(alpha)



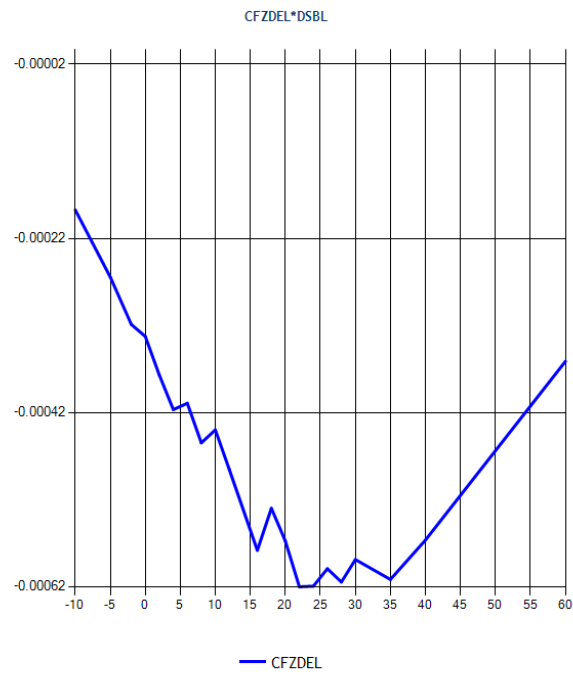
LIFT DUE TO LE SLAT 2

CFZDSD2L(alpha)



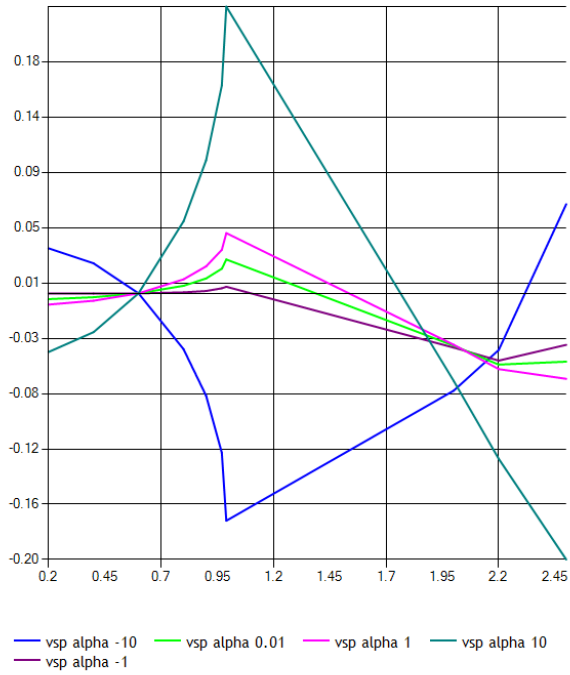
LIFT DUE TO LOWER SPEEDBRAKE DEFLECTION

CFZDEL(alpha)



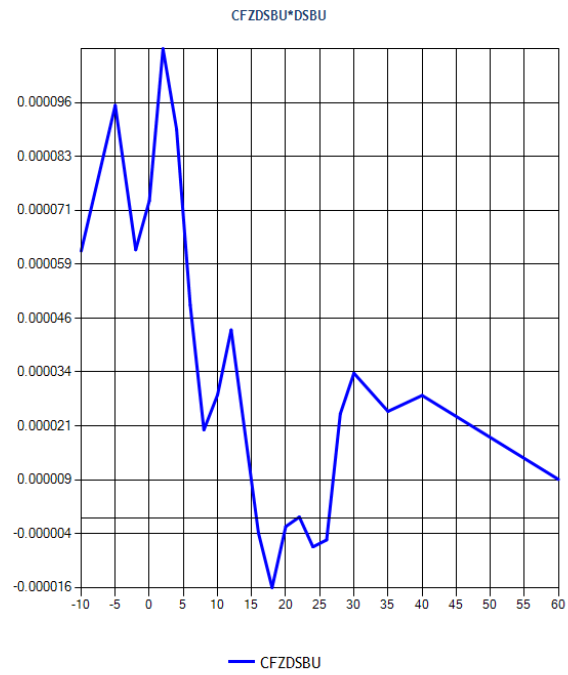
LIFT DUE TO MACH

CFZmn(mach,alpha)



LIFT DUE TO UPPER SPEEDBRAKE DEFLECTION

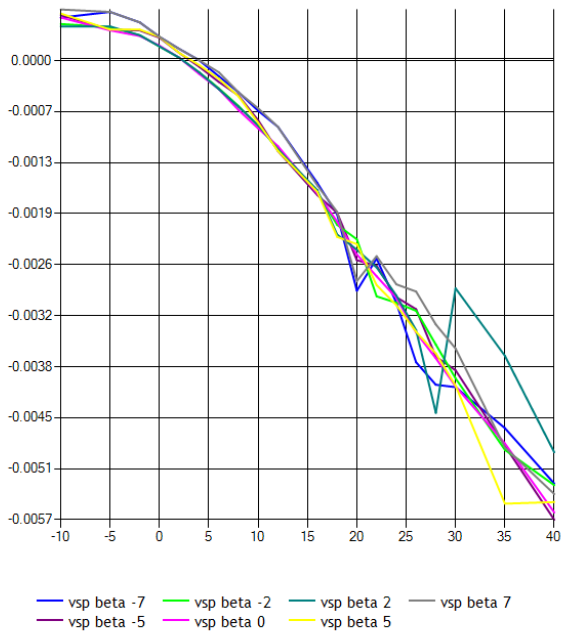
CFZDSBU(alpha)



LIFT INCREMENT DUE TO CENTRE TANK

CFZCTNK(alpha,beta)

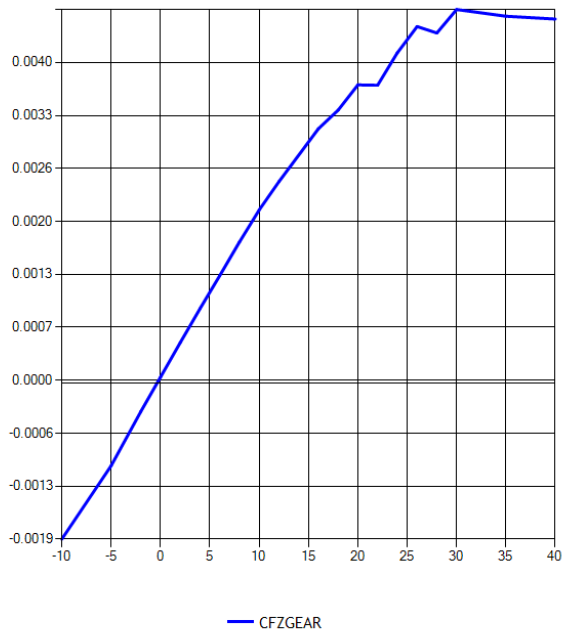
CFZCTNK*metrics/stores-centre-tank



LIFT INCREMENT DUE TO GEAR

CFZGEAR(alpha)

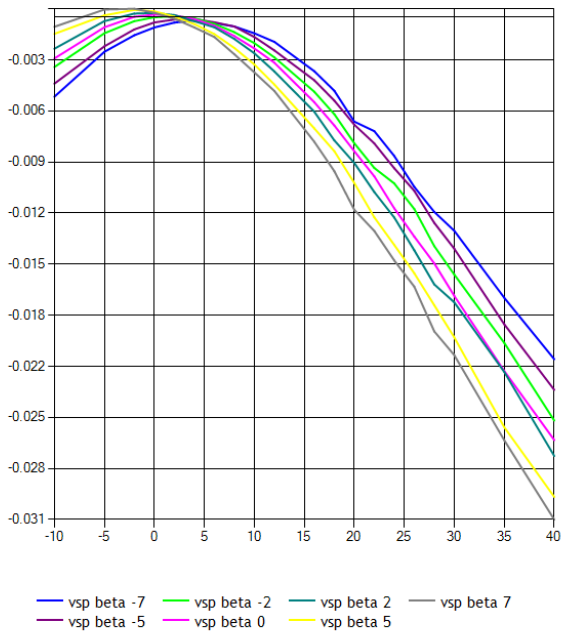
CFZGEAR*gear



LIFT INCREMENT DUE TO LEFT WING TANK

CFZLTNK(alpha,beta)

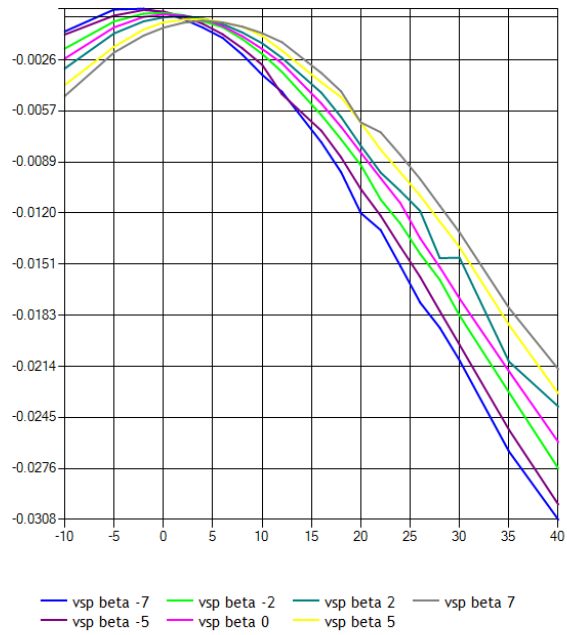
CFZLTNK*metrics/stores-wing-tank-left



LIFT INCREMENT DUE TO RIGHT WING TANK

CFZRTNK(alpha,beta)

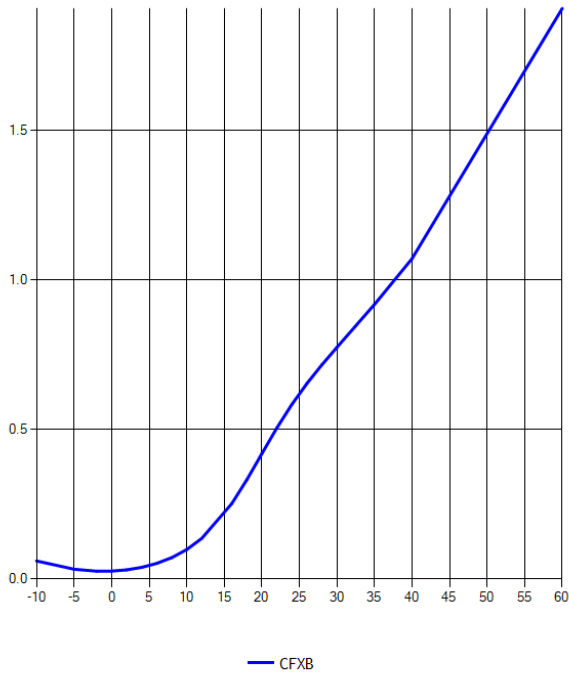
CFZRTNK*metrics/stores-wing-tank-right



DRAG

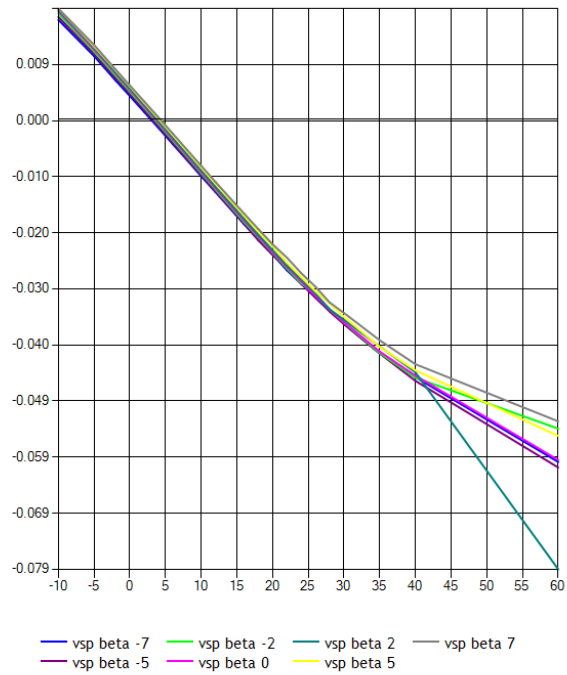
BASIC DRAG

CFXB(alpha)

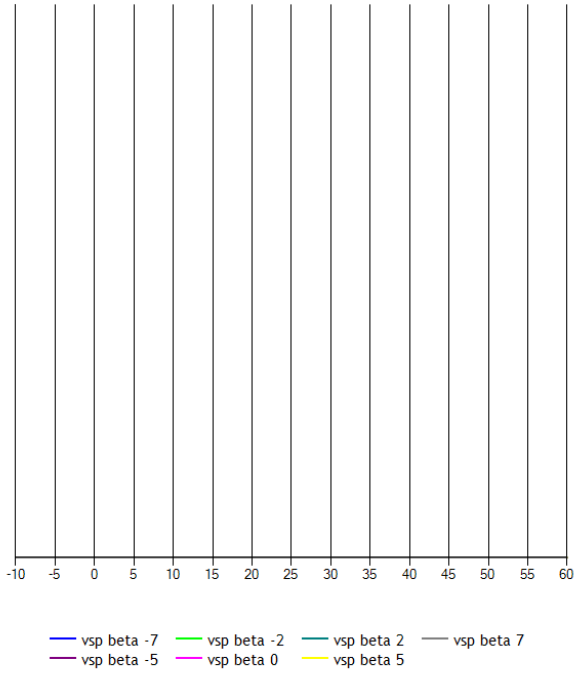


DRAG DUE TO ELEVON 1L

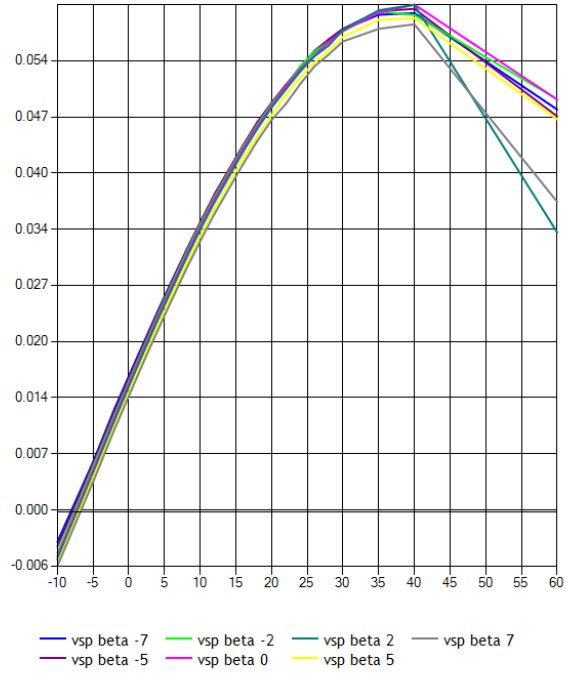
CFXDED1L (alpha,beta,DED1L=-16)



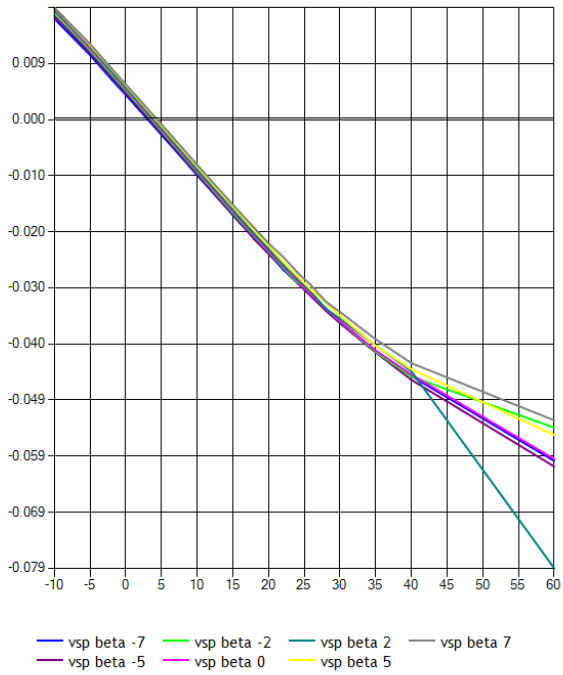
DRAG DUE TO ELEVON 1L
CFXDED1L (alpha,beta,DED1L=0)



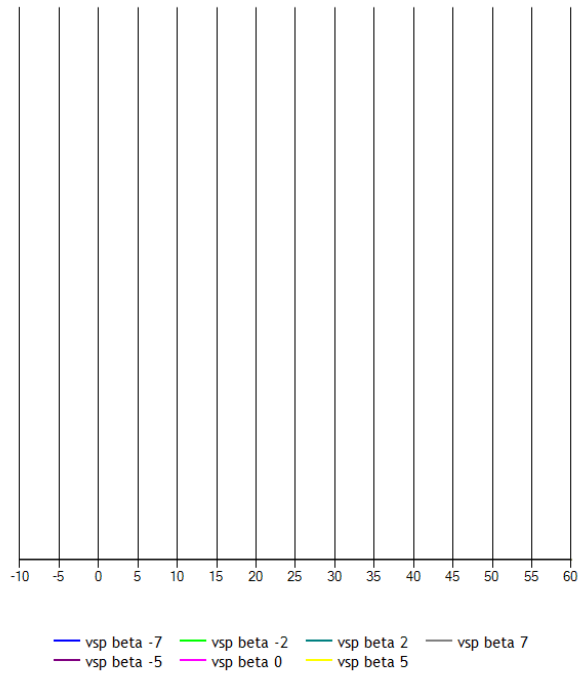
DRAG DUE TO ELEVON 1L
CFXDED1L (alpha,beta,DED1L=25)



DRAG DUE TO ELEVON 1R
CFXDED1R (alpha,beta,DED1R=-16)

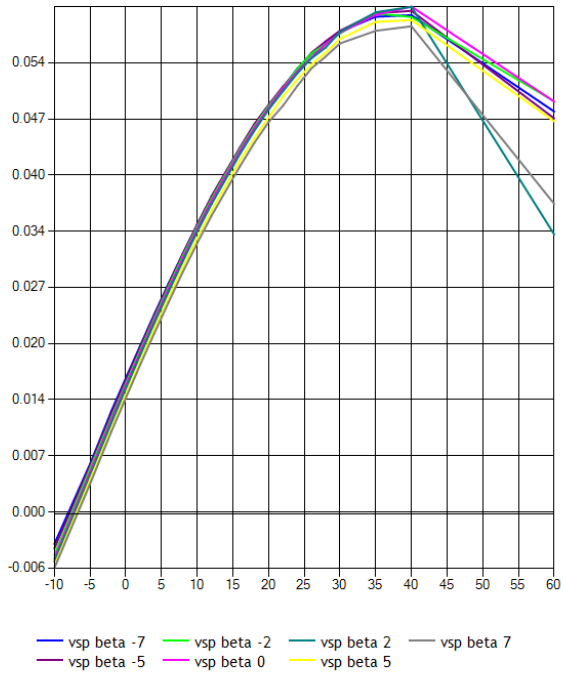


DRAG DUE TO ELEVON 1R
CFXDED1R (alpha,beta,DED1R=0)



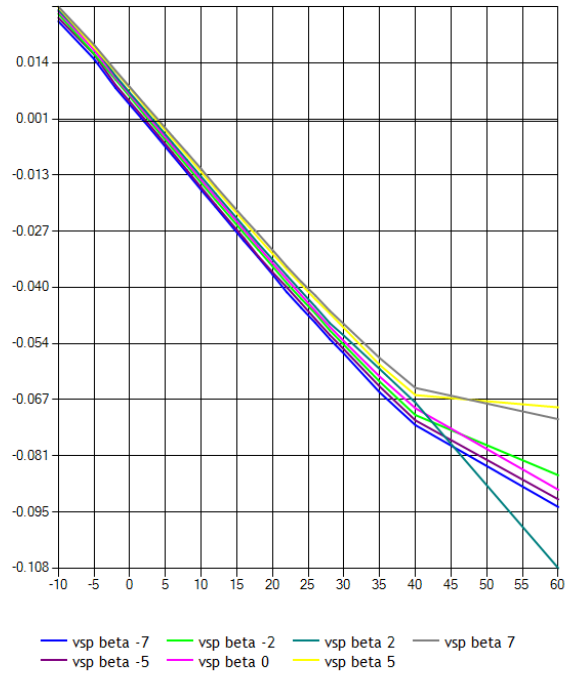
DRAG DUE TO ELEVON 1R

CFXDED1R (alpha,beta,DED1R=25)



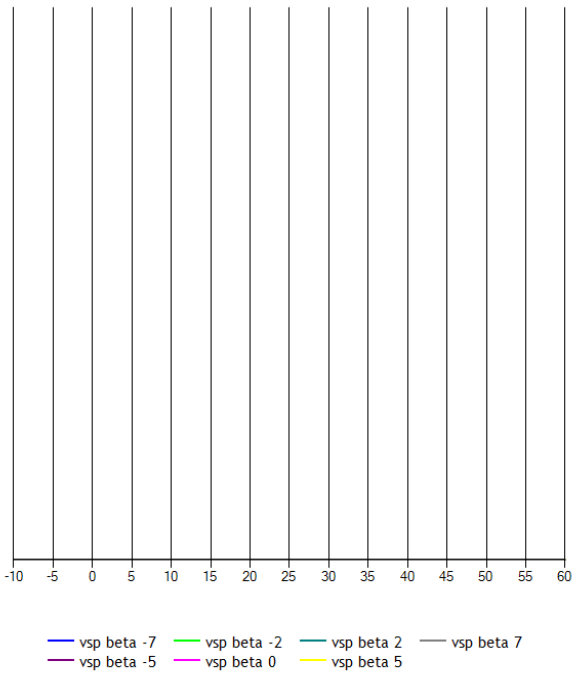
DRAG DUE TO ELEVON 2L

CFXDED2L (alpha,beta,DED2L=-16)



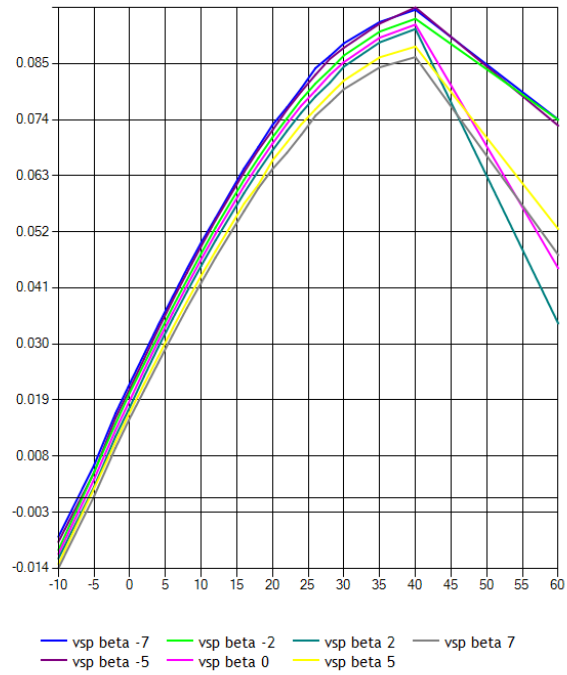
DRAG DUE TO ELEVON 2L

CFXDED2L (alpha,beta,DED2L=0)



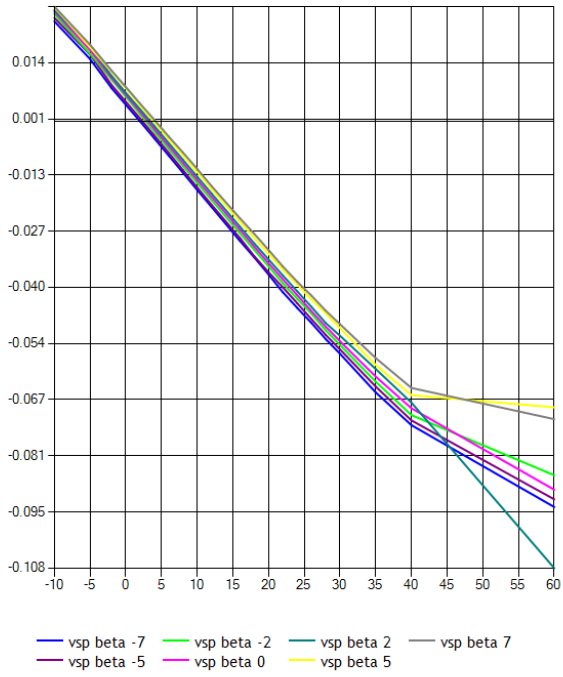
DRAG DUE TO ELEVON 2L

CFXDED2L (alpha,beta,DED2L=25)



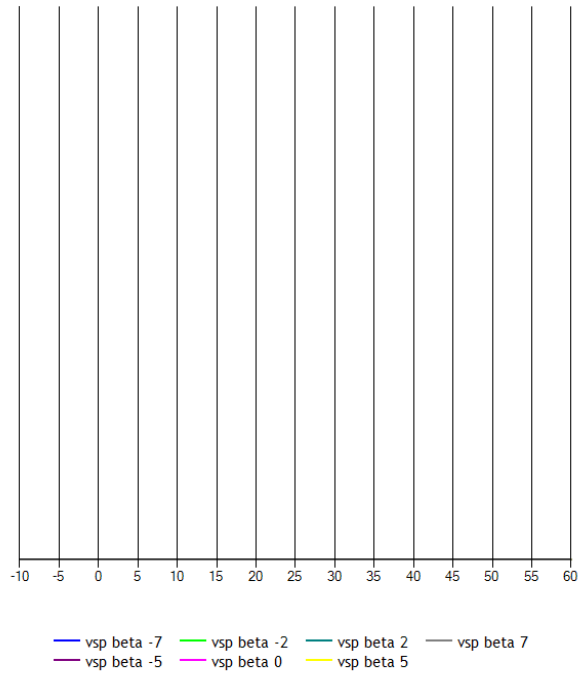
DRAG DUE TO ELEVON 2R

CFXDED2R (alpha,beta,DED2R=-16)



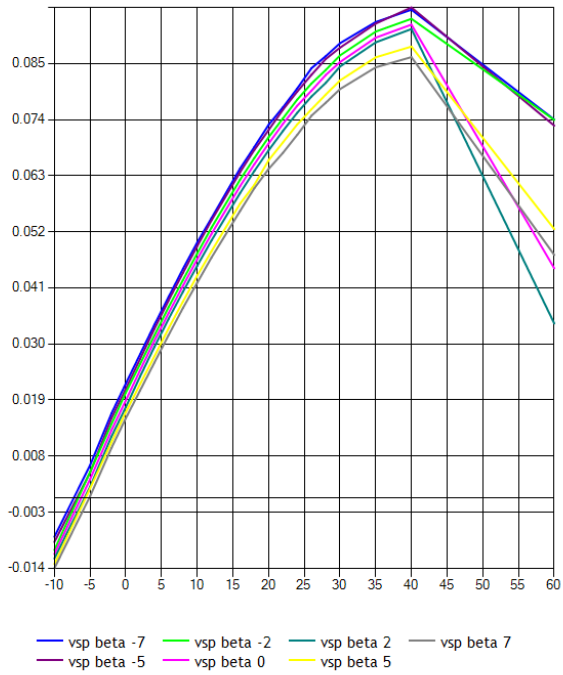
DRAG DUE TO ELEVON 2R

CFXDED2R (alpha,beta,DED2R=0)



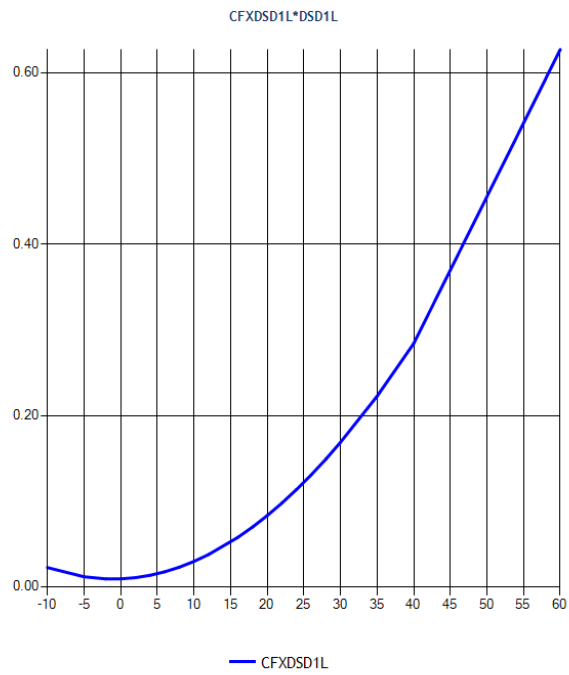
DRAG DUE TO ELEVON 2R

CFXDED2R (alpha,beta,DED2R=25)



DRAG DUE TO LE SLAT 1

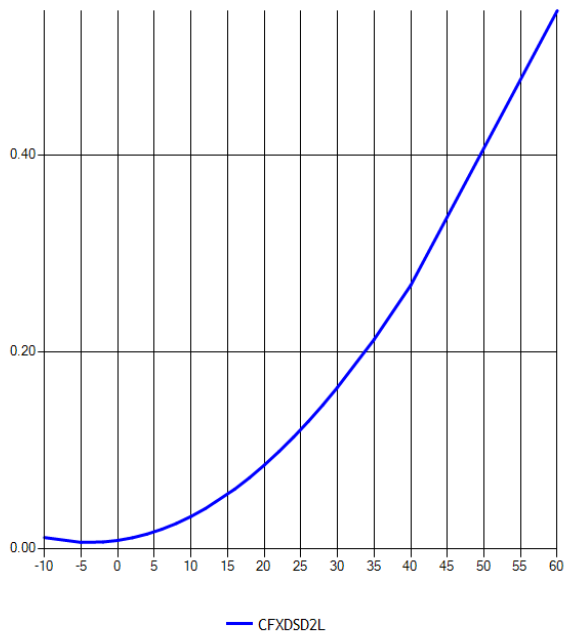
CFXDSD1L(alpha)



DRAG DUE TO LE SLAT 2

CFXDSD2L(alpha)

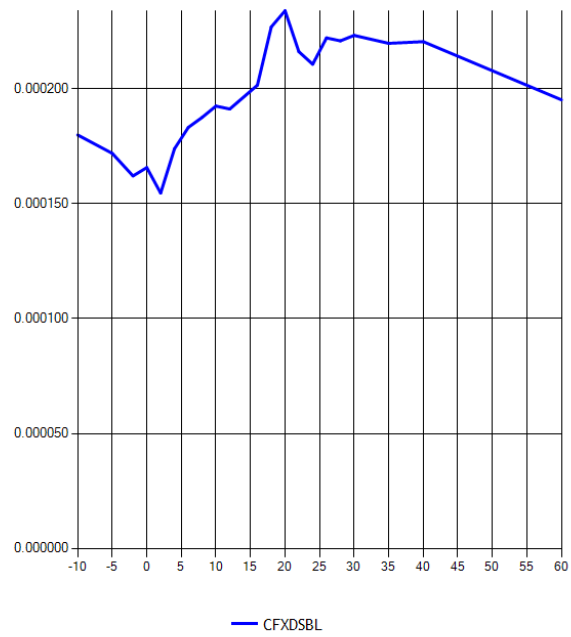
CFXDSD2L*DSD2L



DRAG DUE TO LOWER SPEEDBRAKE DEFLECTION

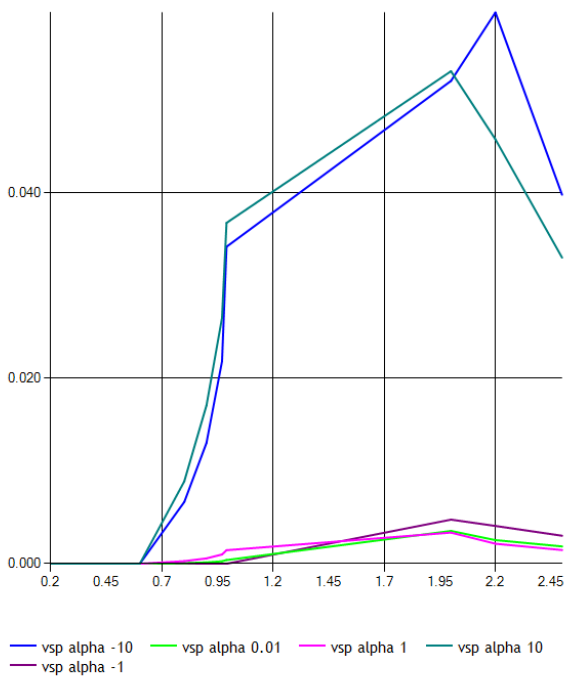
CFXDSDL(alpha)

CFXDSDL*DSBL



DRAG DUE TO MACH

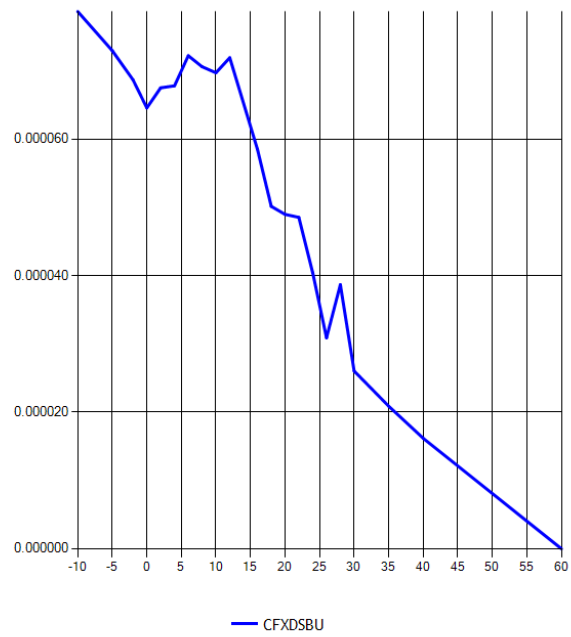
CFXmn(mach,alpha)



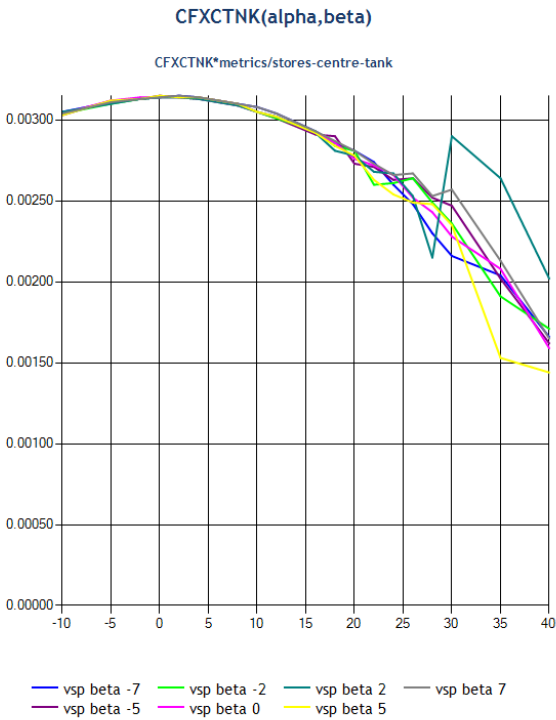
DRAG DUE TO UPPER SPEEDBRAKE DEFLECTION

CFXDSEU(alpha)

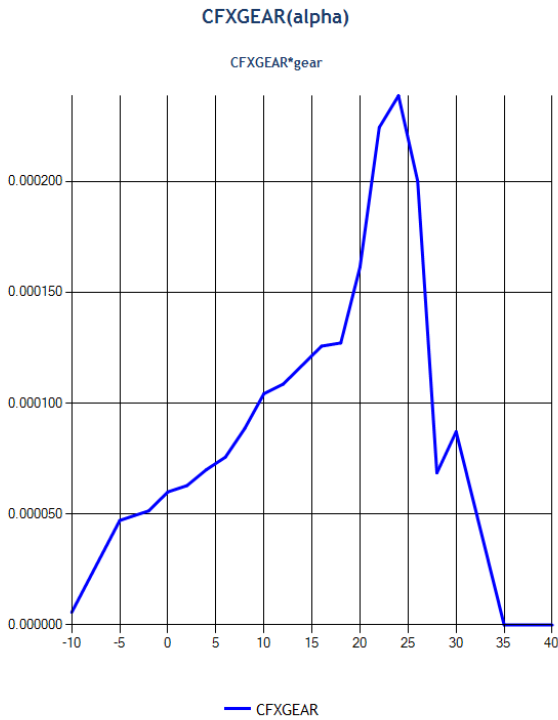
CFXDSEU*DSBU



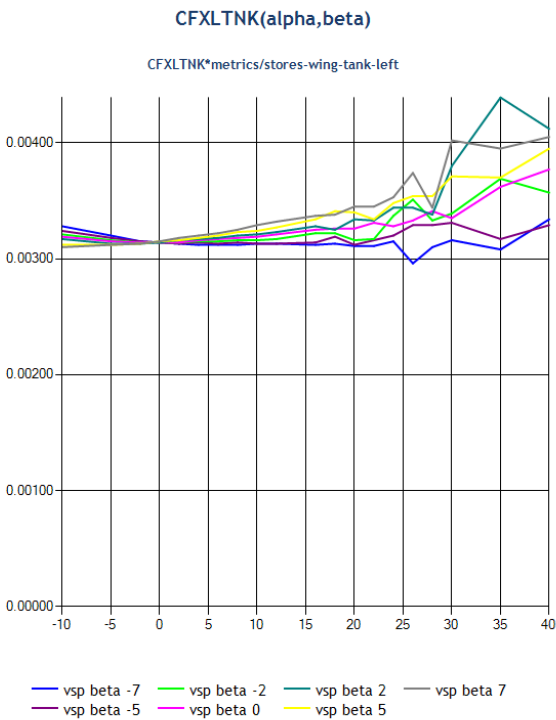
DRAG INCREMENT DUE TO CENTRE TANK



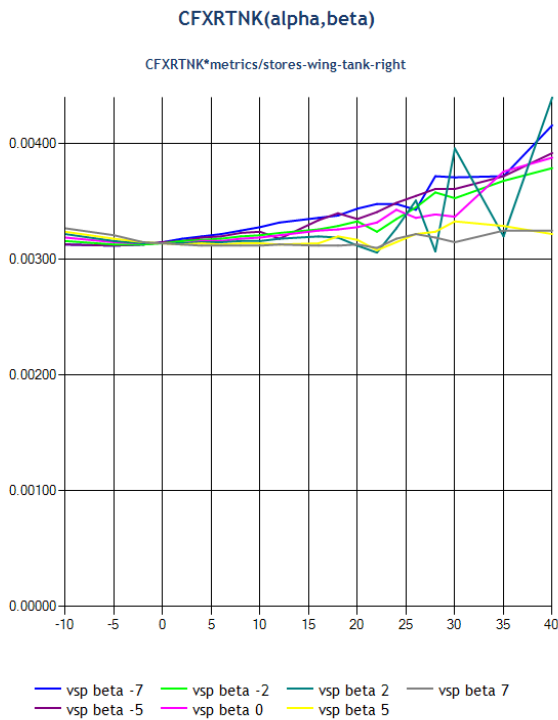
DRAG INCREMENT DUE TO GEAR



DRAG INCREMENT DUE TO LEFT WING TANK



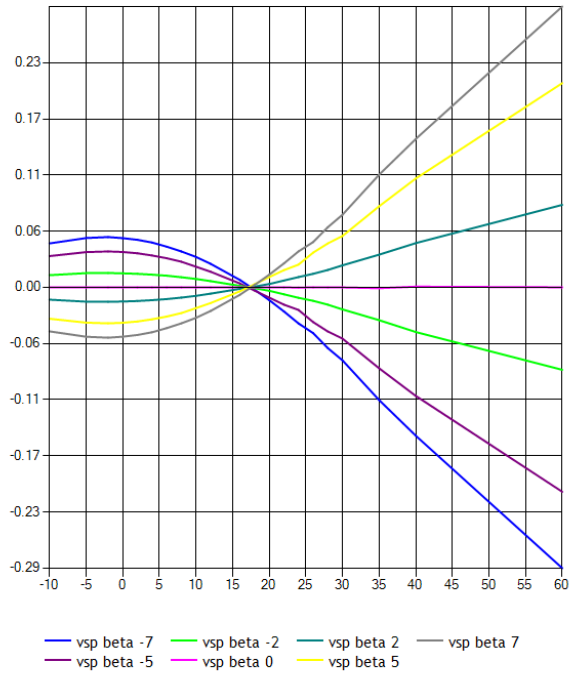
DRAG INCREMENT DUE TO RIGHT WING TANK



SIDE

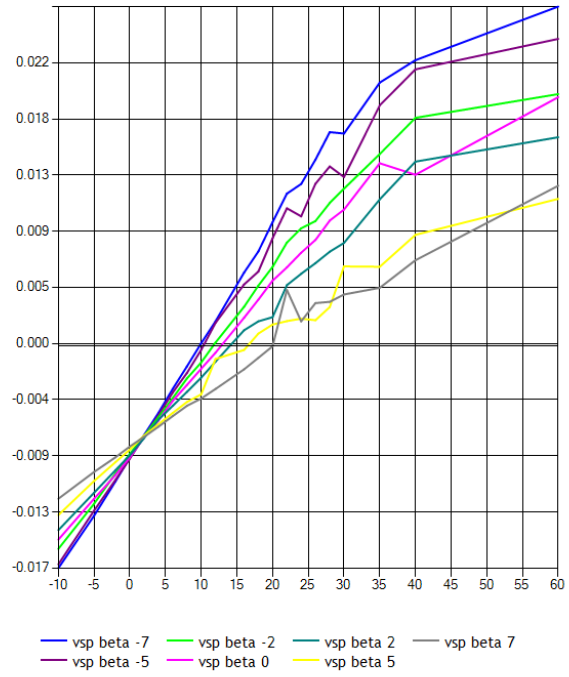
BASIC SIDE FORCE

CFYB(alpha,beta)



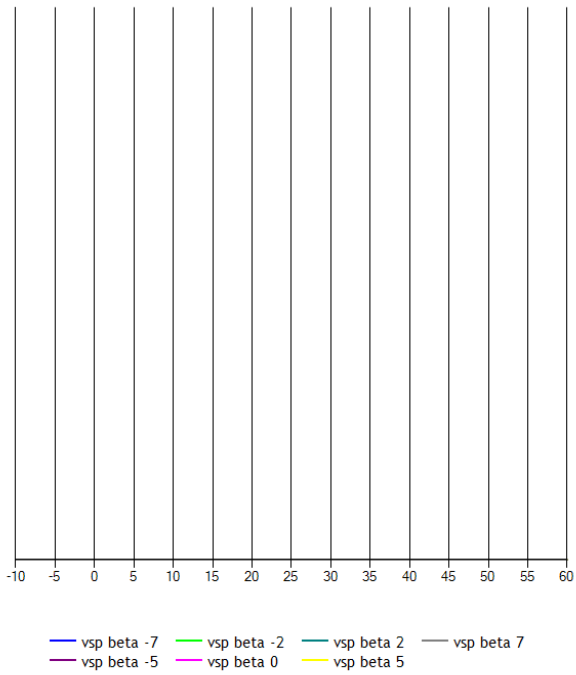
SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=-16)



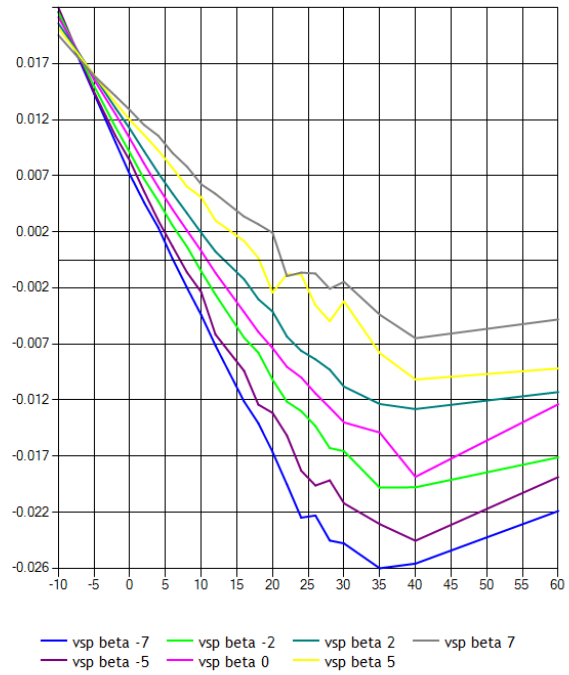
SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=0)



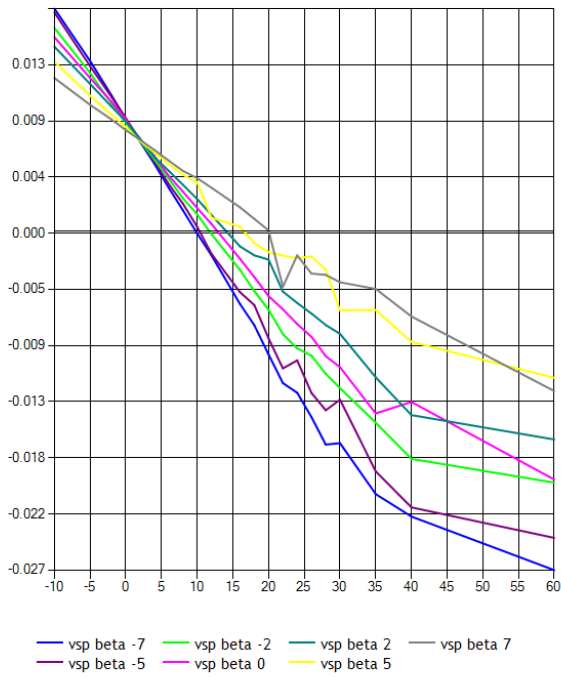
SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=25)



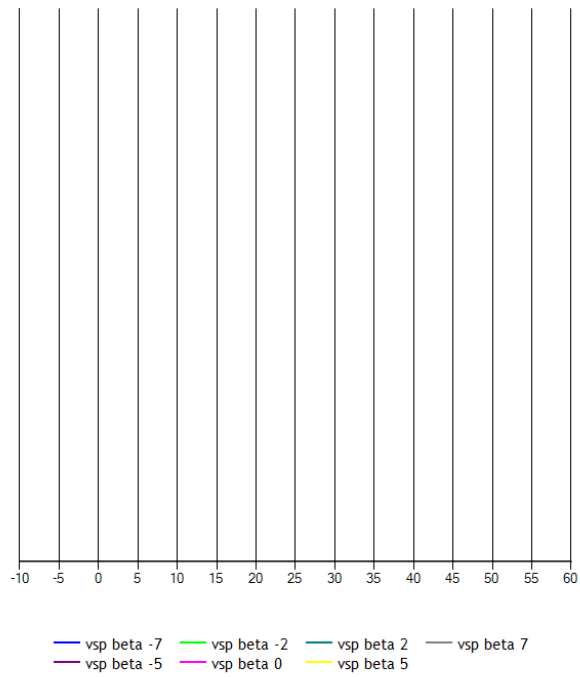
SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=-16)



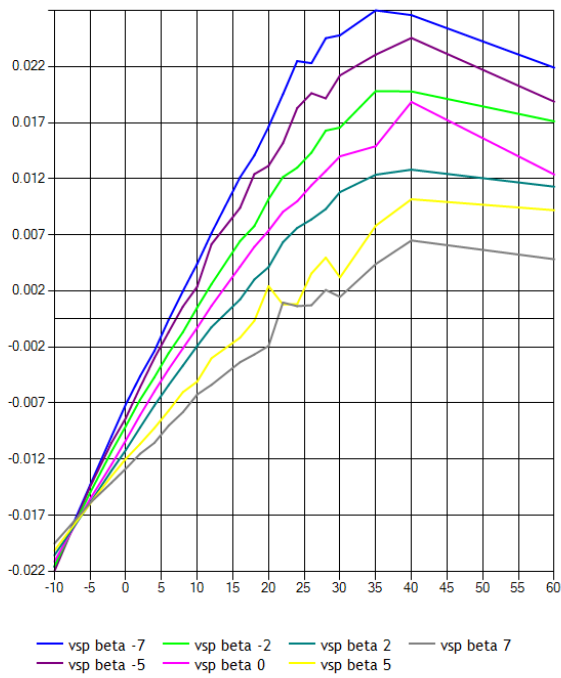
SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=0)



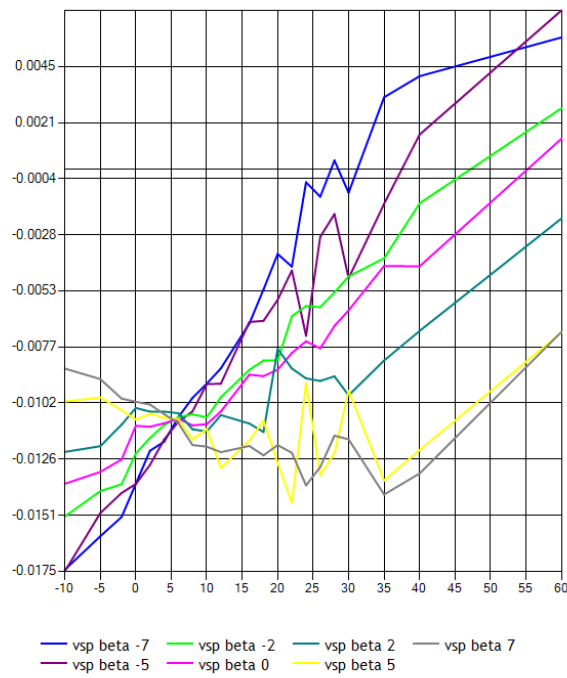
SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=25)



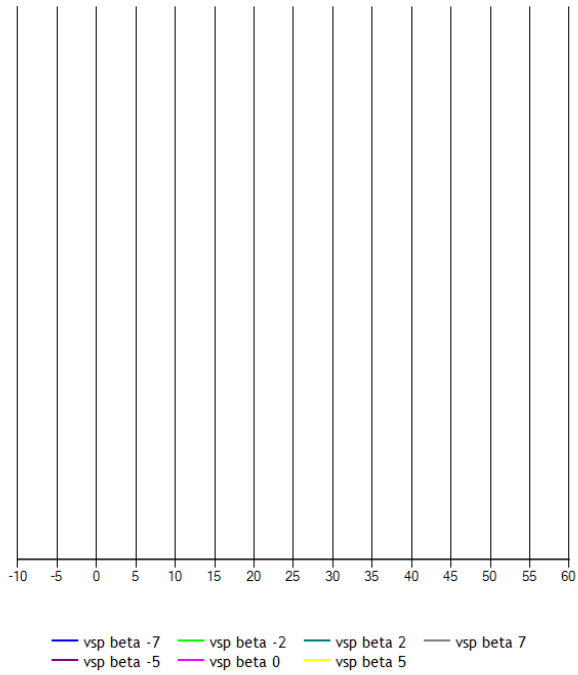
SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=-16)



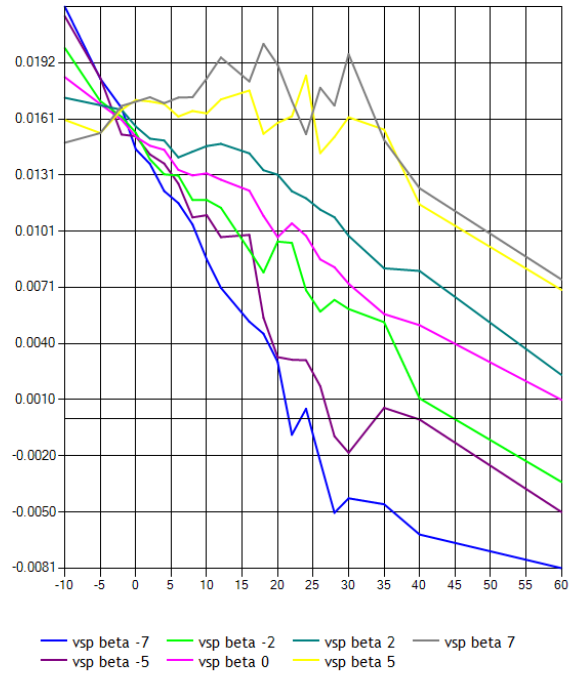
SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=0)



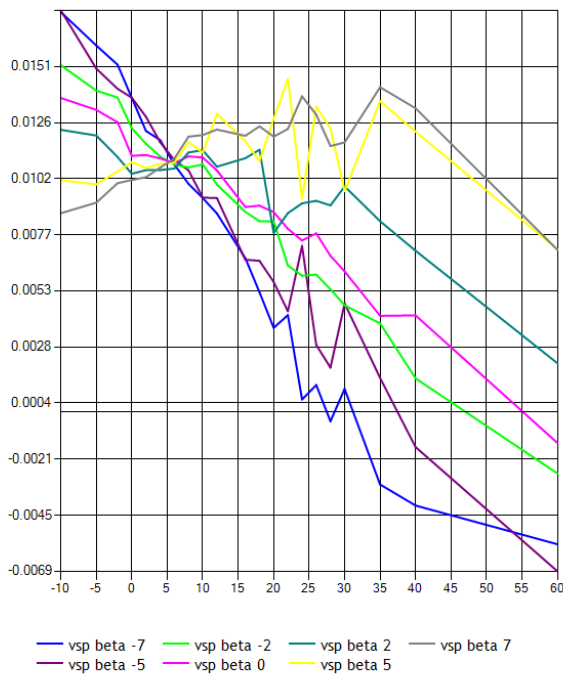
SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=25)



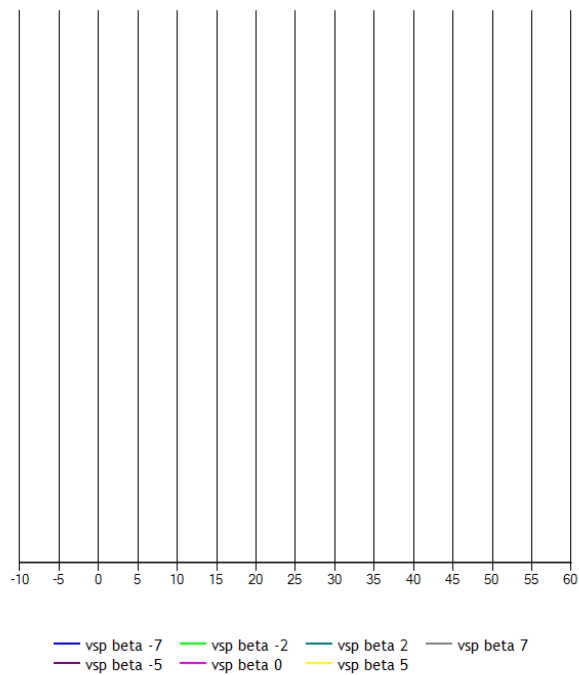
SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=-16)



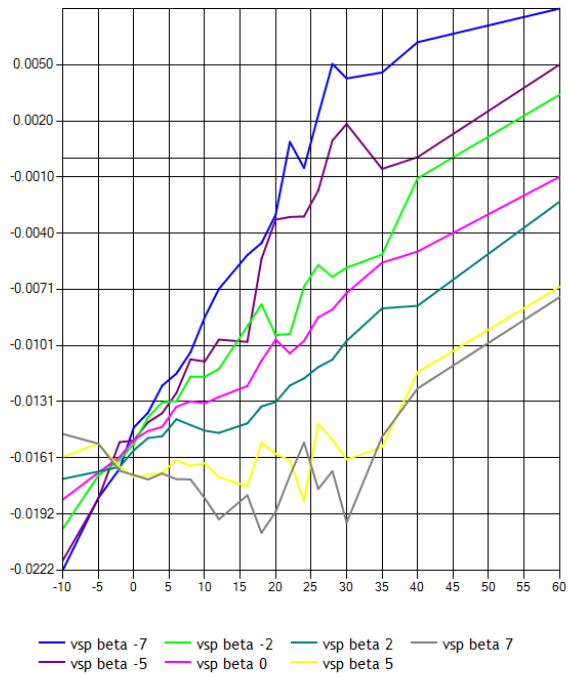
SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=0)



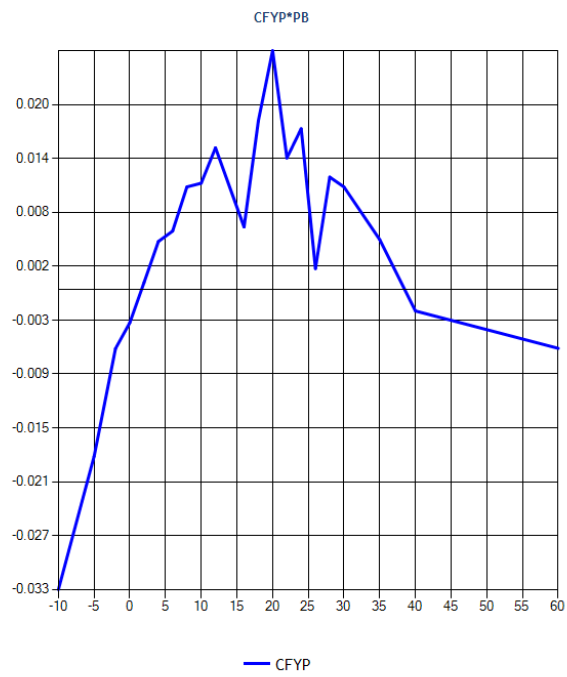
SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=25)



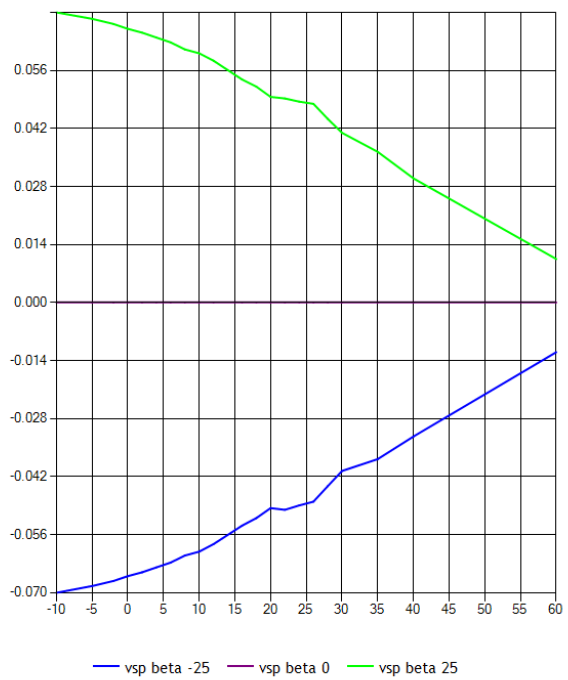
SIDE FORCE DUE TO ROLL RATE

CFYP(alpha)



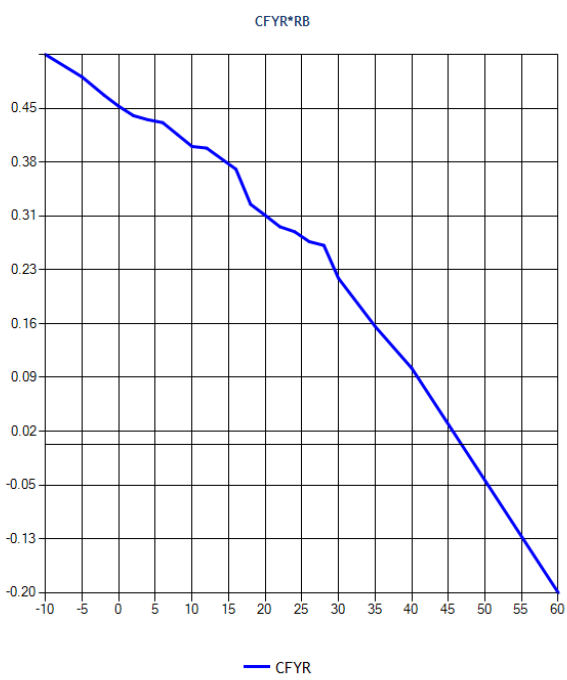
SIDE FORCE DUE TO RUDDER DEFLECTION

CFYDRD (alpha,beta,DRD=0)



SIDE FORCE DUE TO YAW RATE

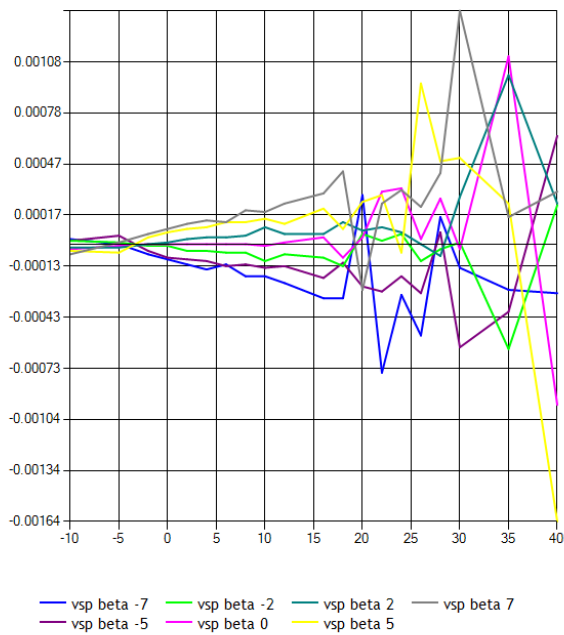
CFYR(alpha)



SIDE FORCE INCREMENT DUE TO CENTRE TANK

CFYCTNK(alpha,beta)

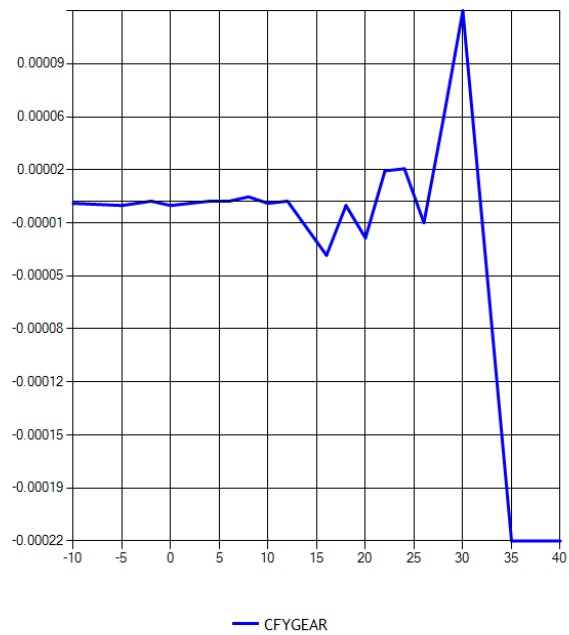
CFYCTNK*metrics/stores-centre-tank



SIDE FORCE INCREMENT DUE TO GEAR

CFYGEAR(alpha)

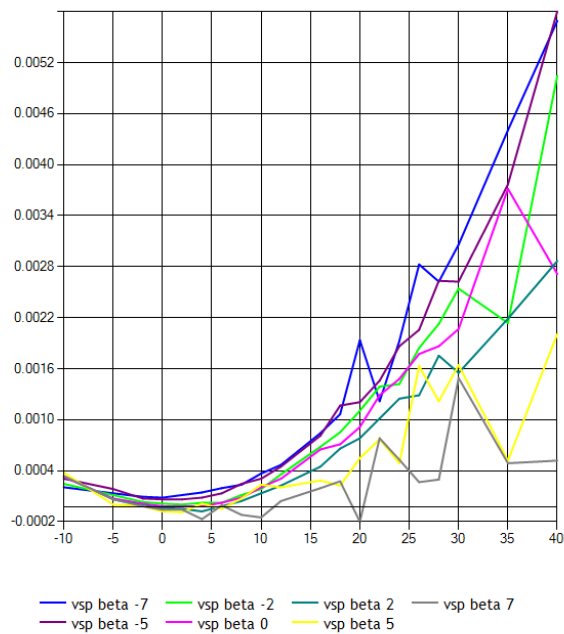
CFYGEAR*gear



SIDE FORCE INCREMENT DUE TO LEFT WING TANK

CFYLTNK(alpha,beta)

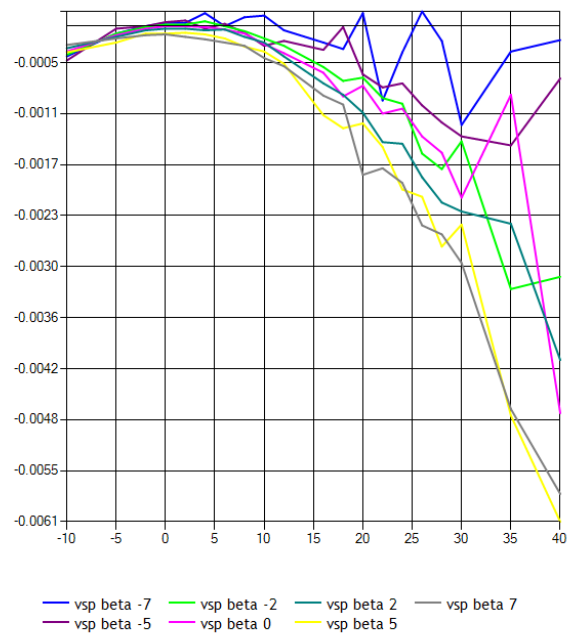
CFYLTNK*metrics/stores-wing-tank-left



SIDE FORCE INCREMENT DUE TO RIGHT WING TANK

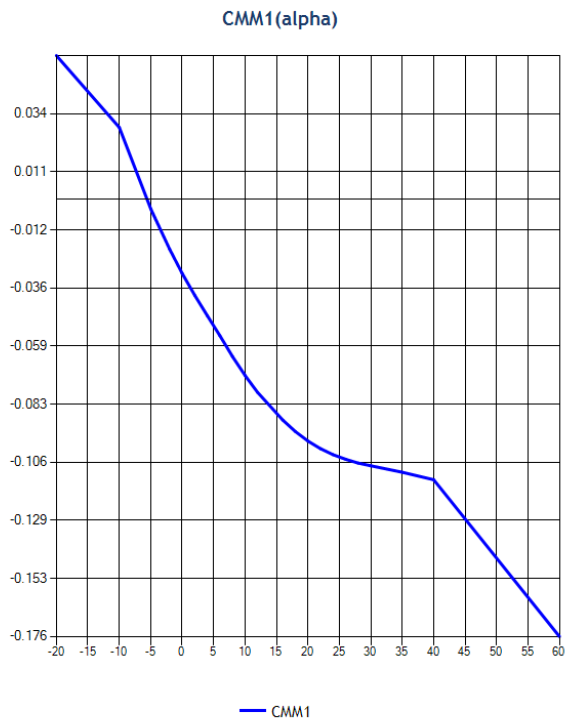
CFYRTNK(alpha,beta)

CFYRTNK*metrics/stores-wing-tank-right

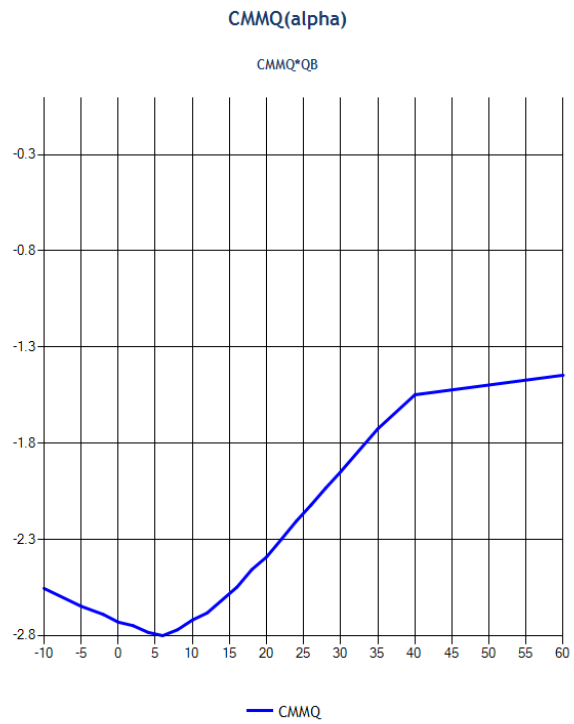


PITCH

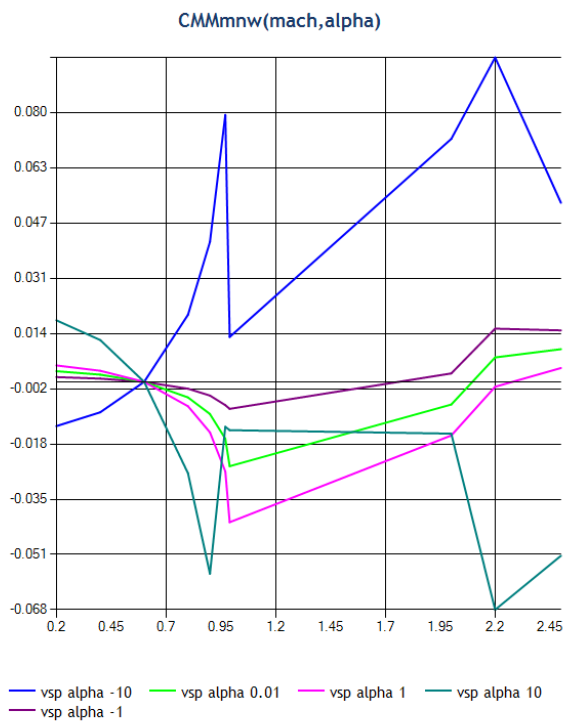
BASIC PITCHING MOMENT



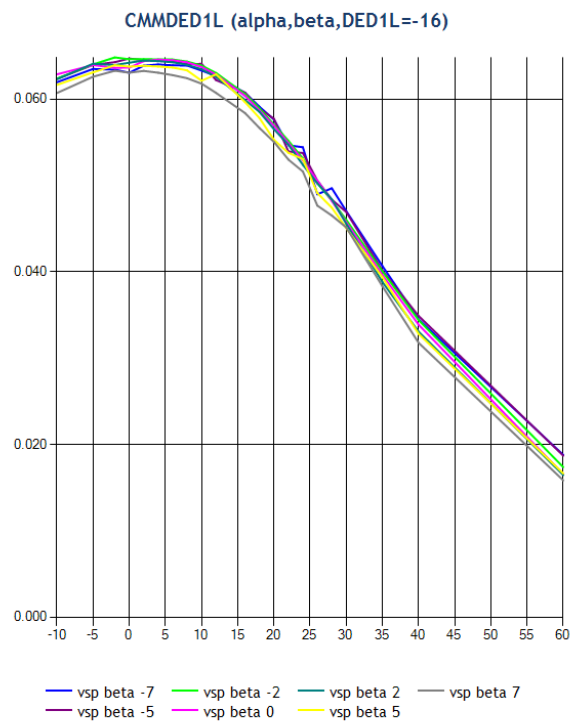
PITCH DAMPING DERIVATIVE



PITCH DUE TO MACH

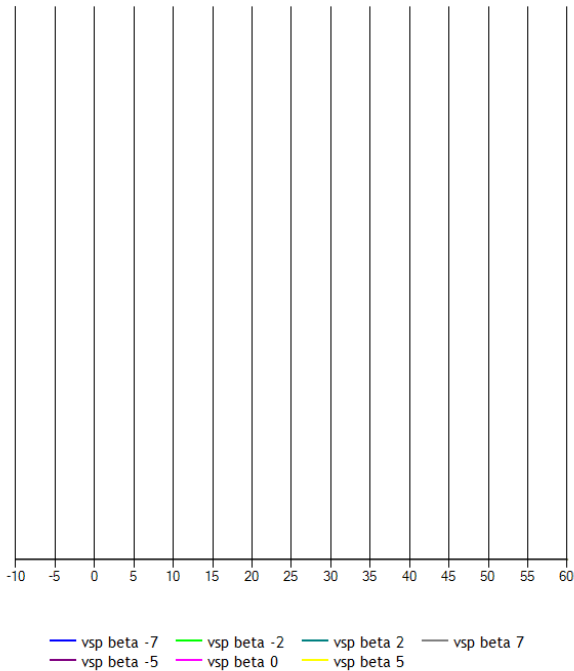


PITCH MOMENT DUE TO ELEVON 1L



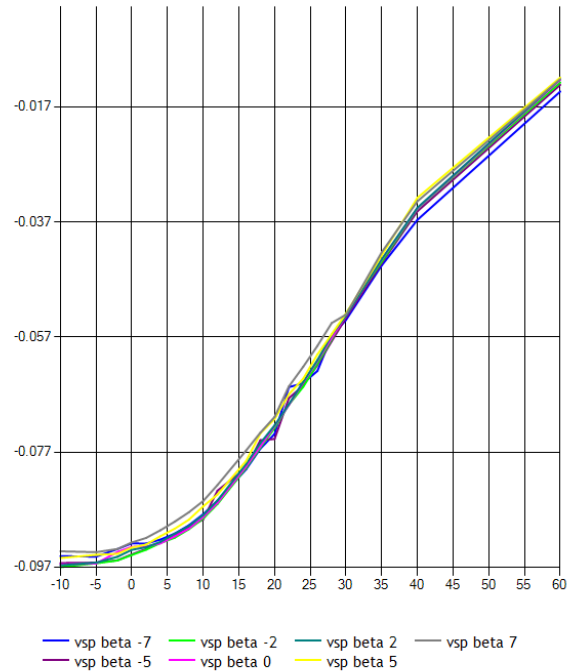
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=0)



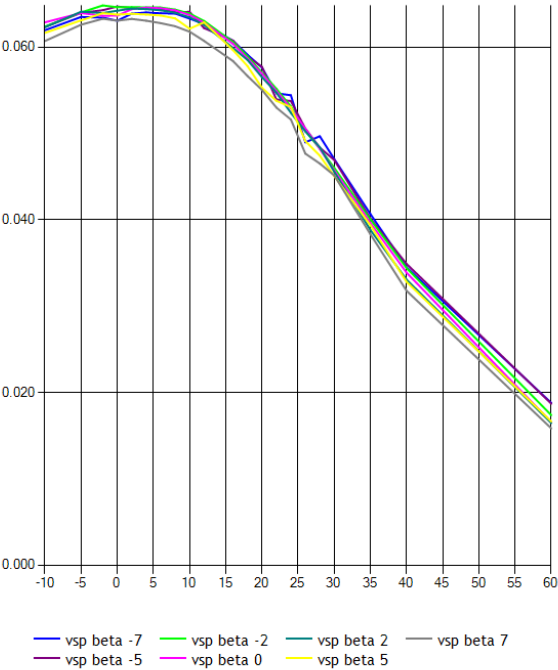
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=25)



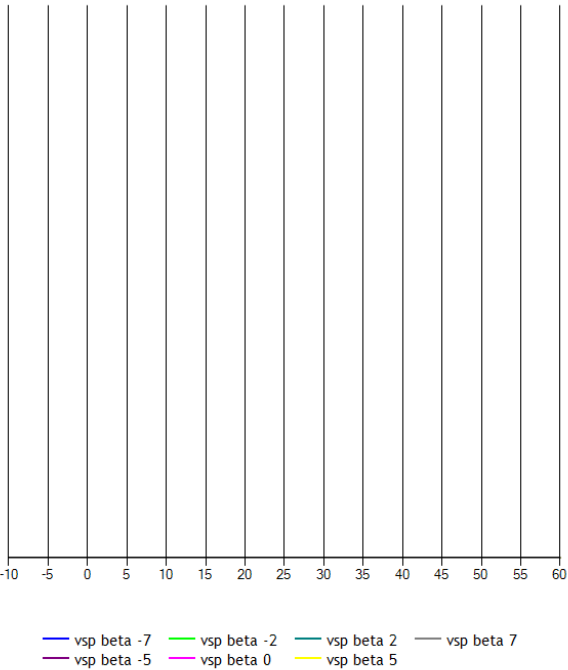
PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=-16)



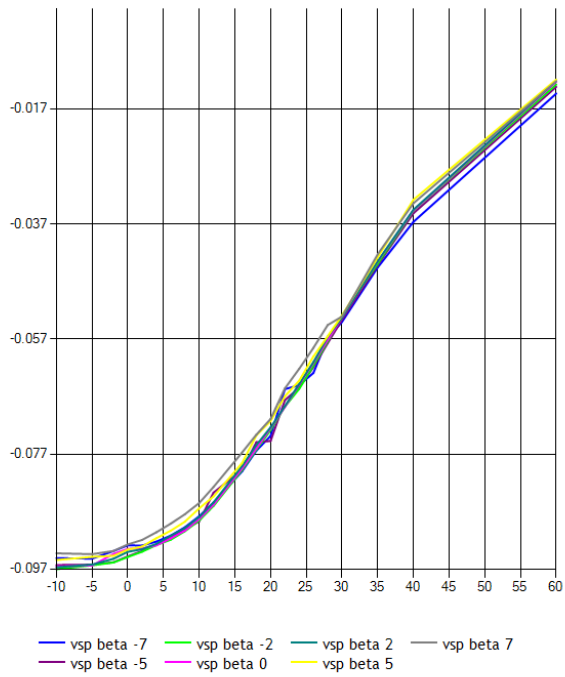
PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=0)



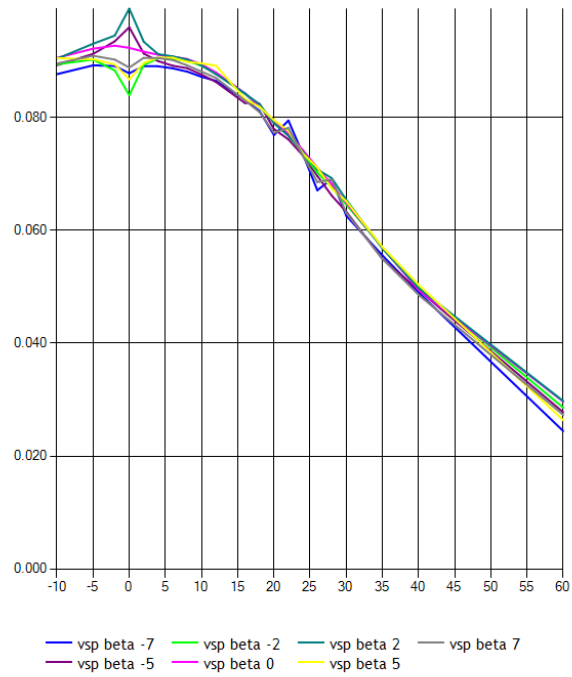
PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=25)



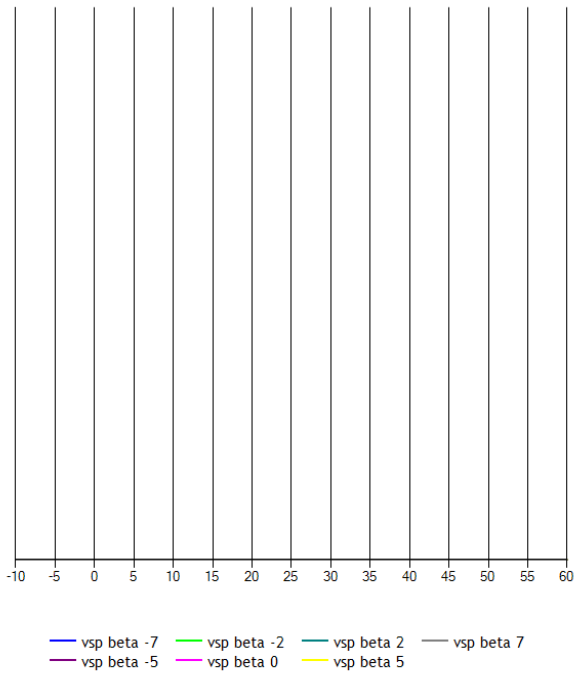
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=-16)



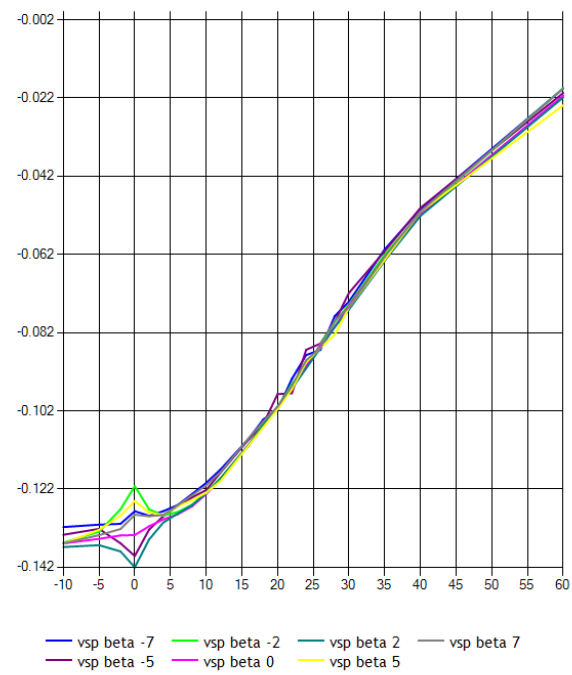
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=0)



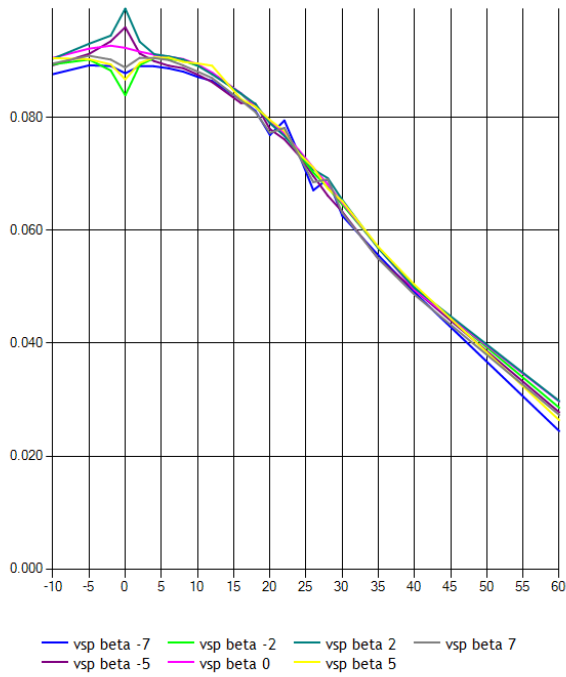
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=25)



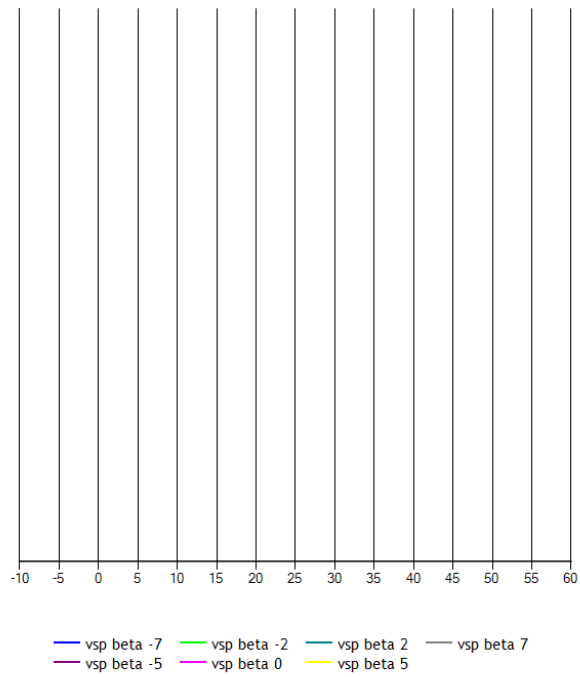
PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=-16)



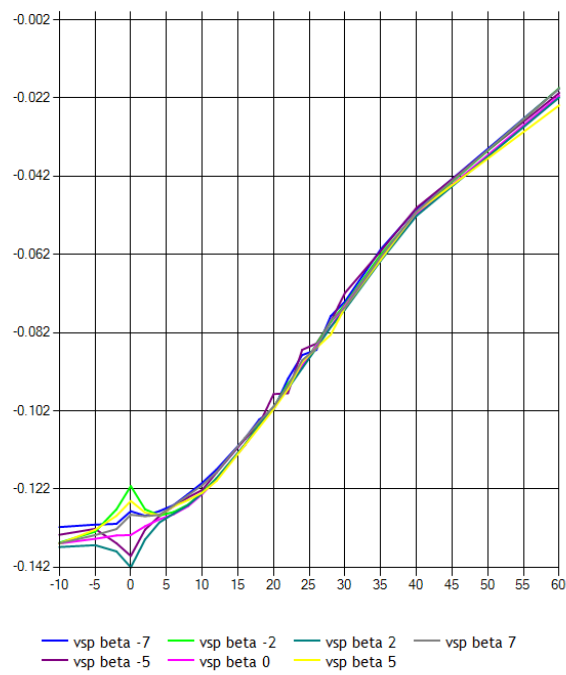
PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=0)



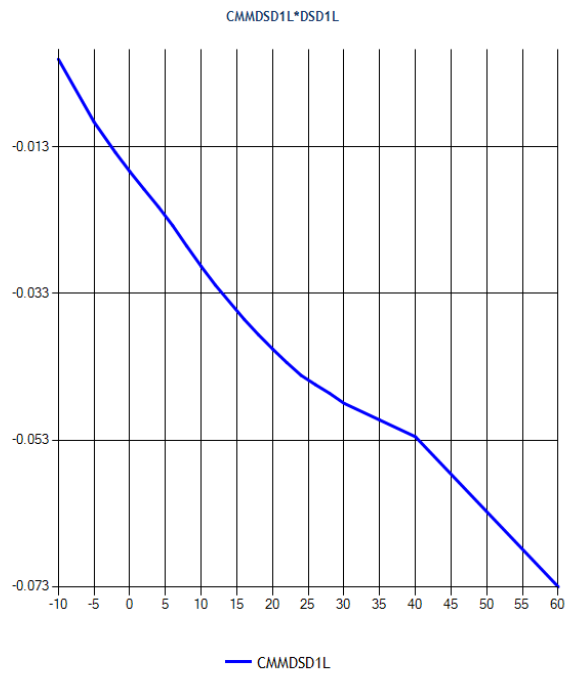
PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=25)

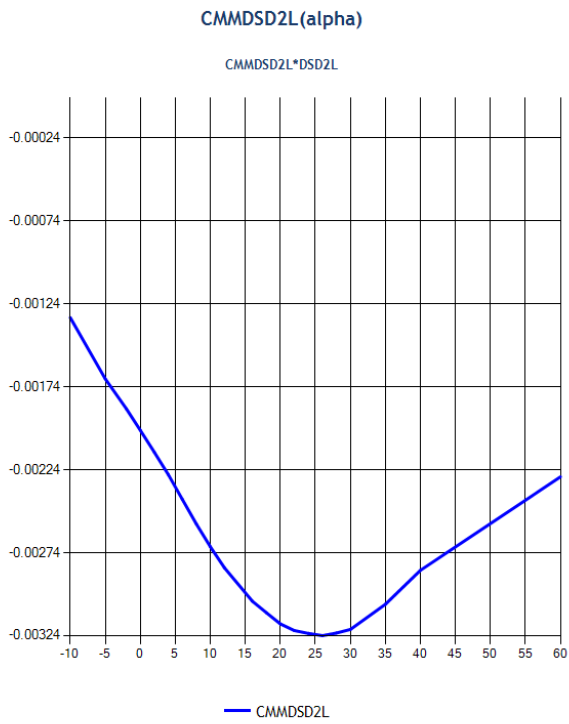


PITCH MOMENT DUE TO LE SLAT 1

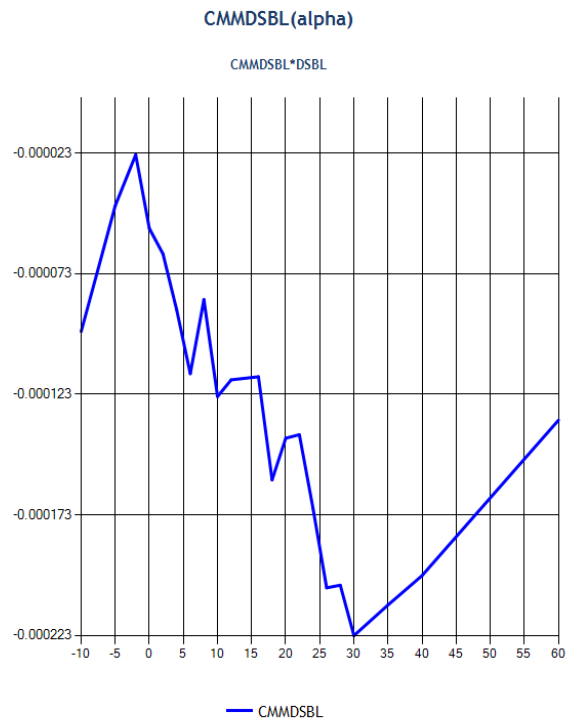
CMMDS1L(alpha)



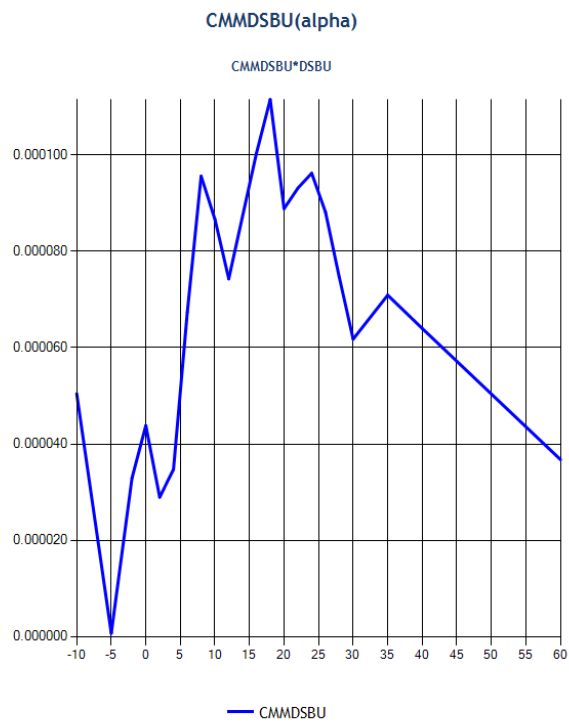
PITCH MOMENT DUE TO LE SLAT 2



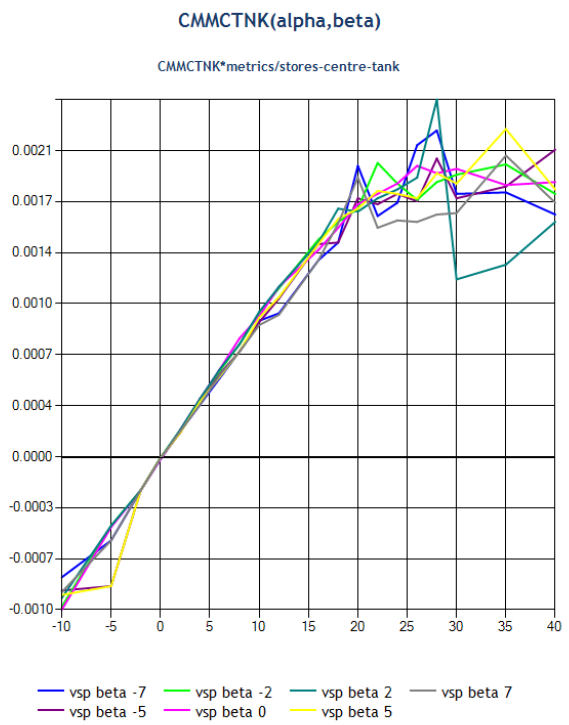
PITCH MOMENT DUE TO LOWER SPEEDBRAKE DEFLECTION



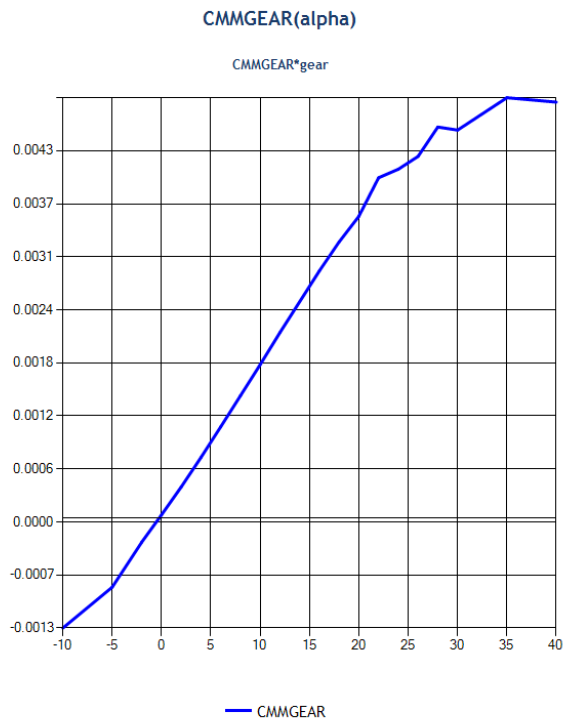
PITCH MOMENT DUE TO UPPER SPEEDBRAKE DEFLECTION



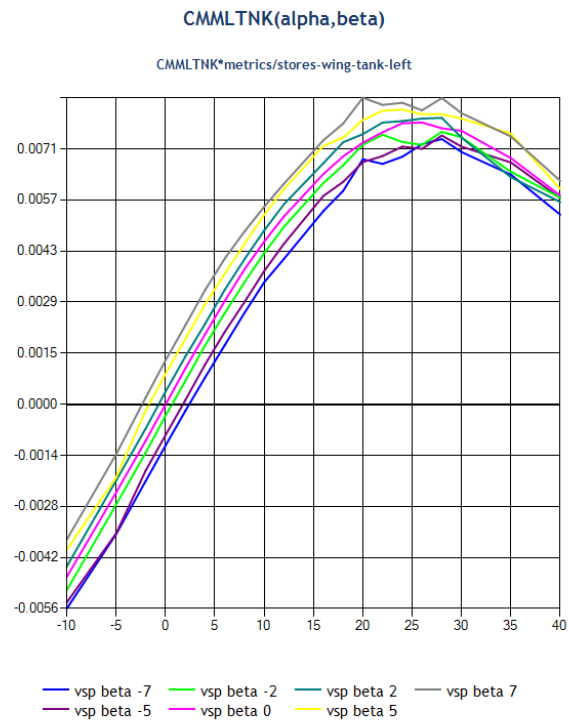
PITCHING MOMENT INCREMENT DUE TO CENTRE TANK



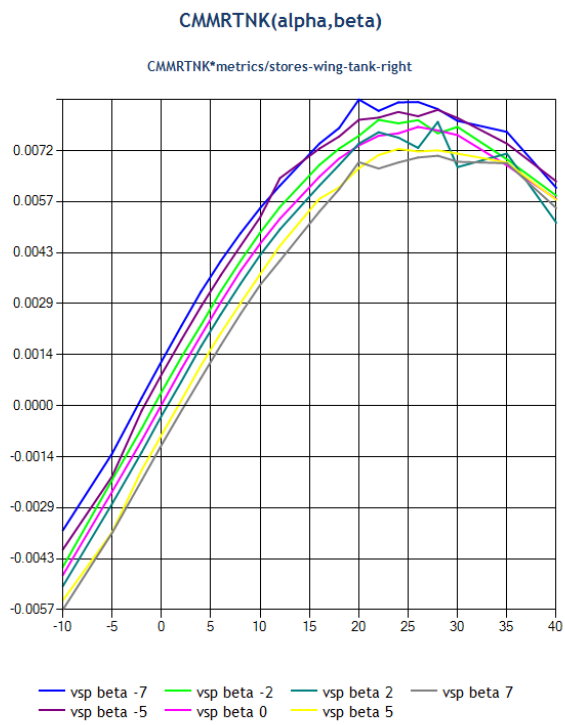
PITCHING MOMENT INCREMENT DUE TO GEAR



PITCHING MOMENT INCREMENT DUE TO LEFT WING TANK



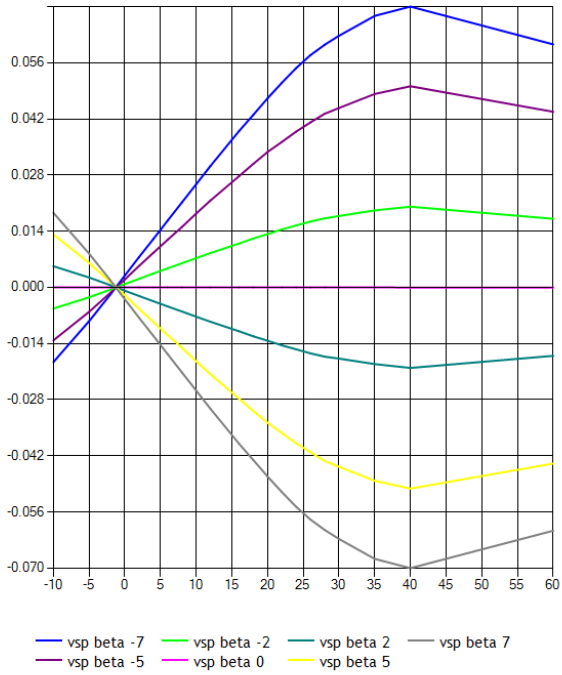
PITCHING MOMENT INCREMENT DUE TO RIGHT WING TANK



ROLL

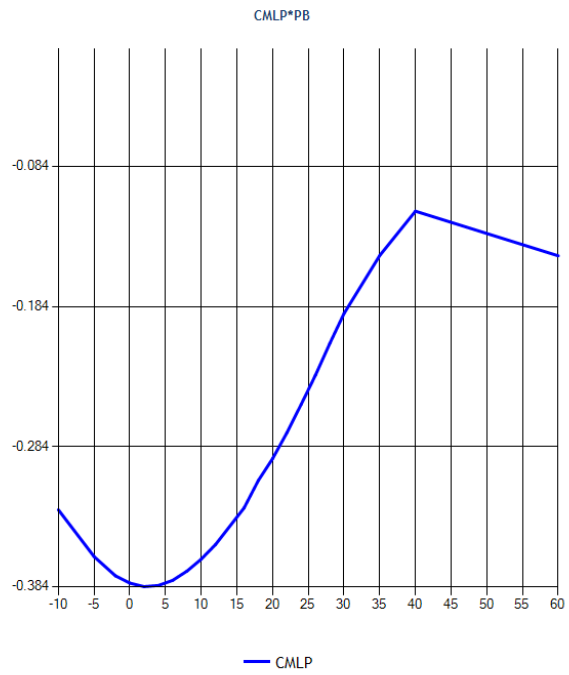
BASIC ROLLING MOMENT

CML1(alpha,beta)



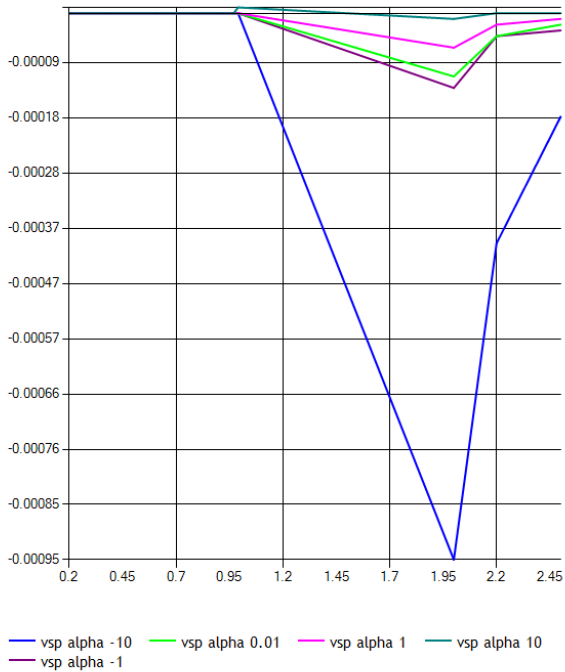
ROLL DAMPING DERIVATIVE

CMLP(alpha)



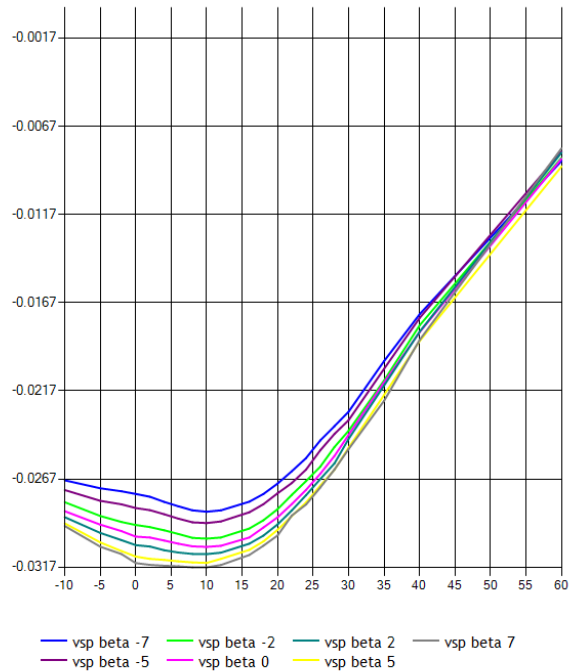
ROLL DUE TO MACH

CMLmnw(mach,alpha)



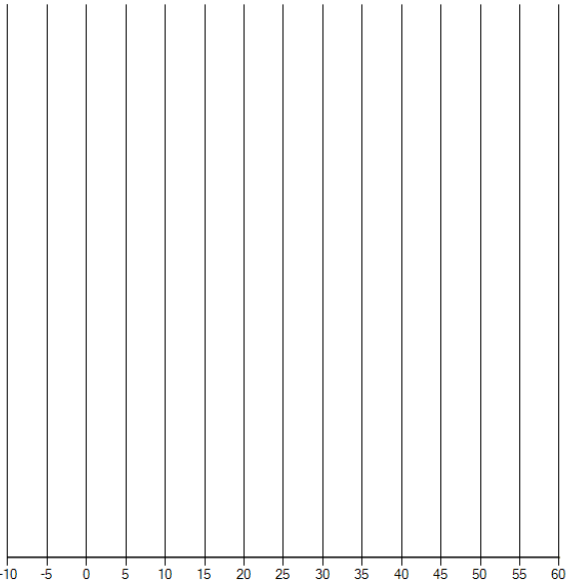
ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

CMLDED1L (alpha,beta,DED1L=-16)



ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

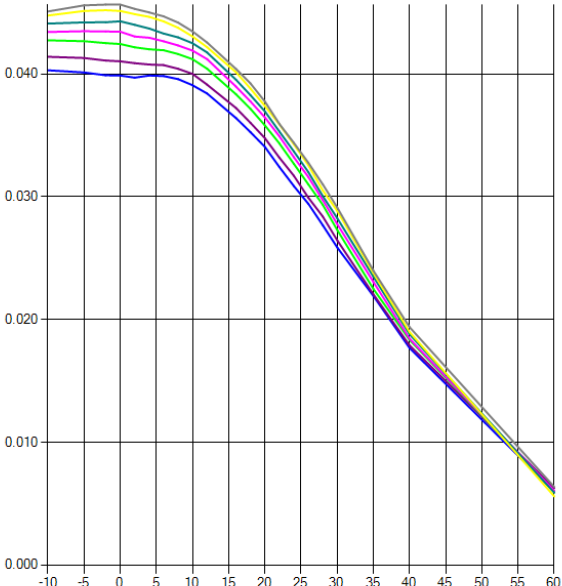
CMLDED1L (alpha,beta,DED1L=0)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

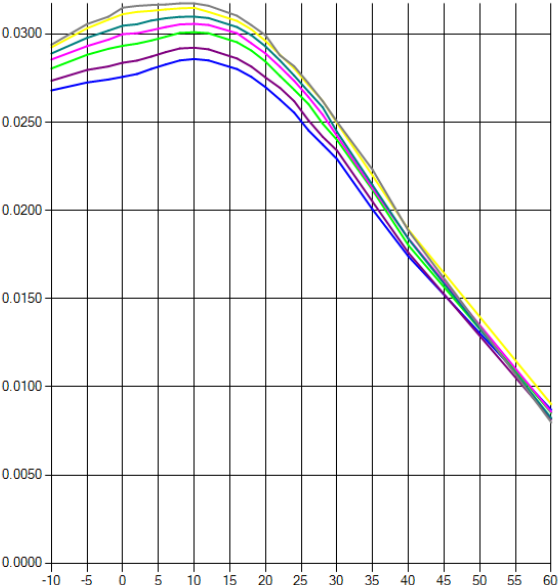
CMLDED1L (alpha,beta,DED1L=25)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION

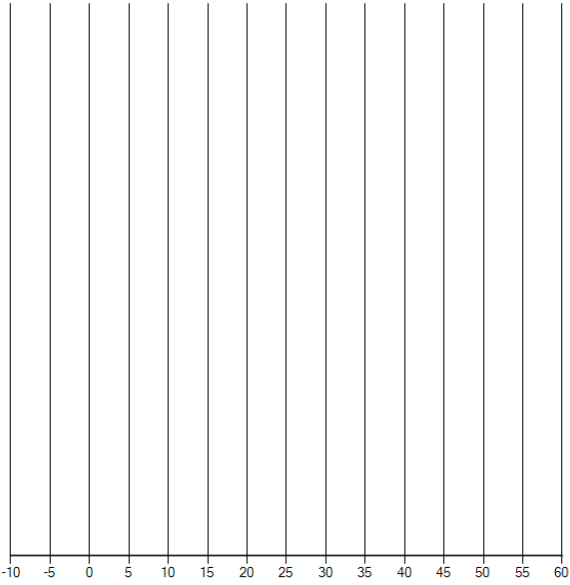
CMLDED1R (alpha,beta,DED1R=-16)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION

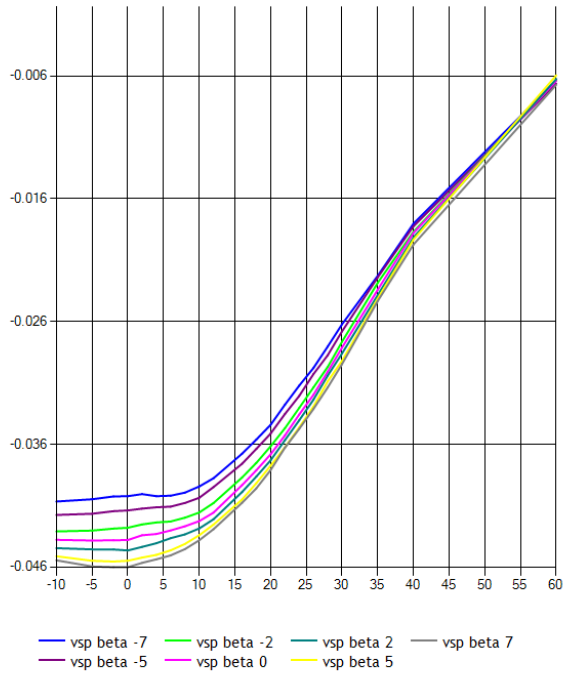
CMLDED1R (alpha,beta,DED1R=0)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

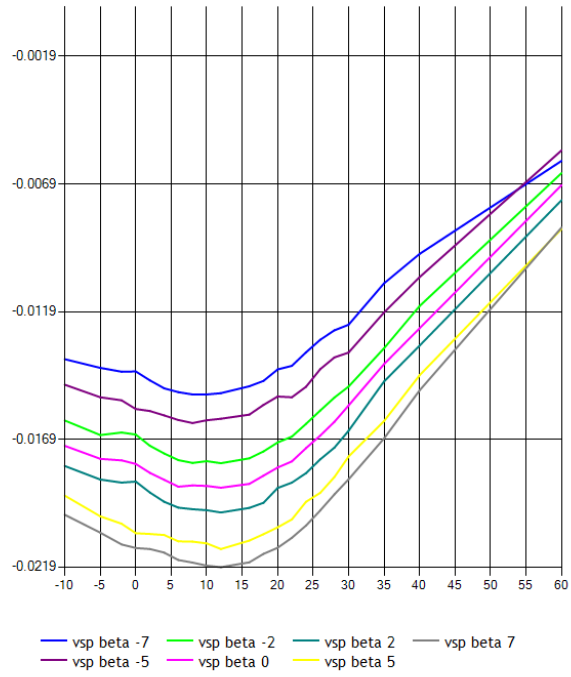
ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION

CMLDED1R (alpha,beta,DED1R=25)



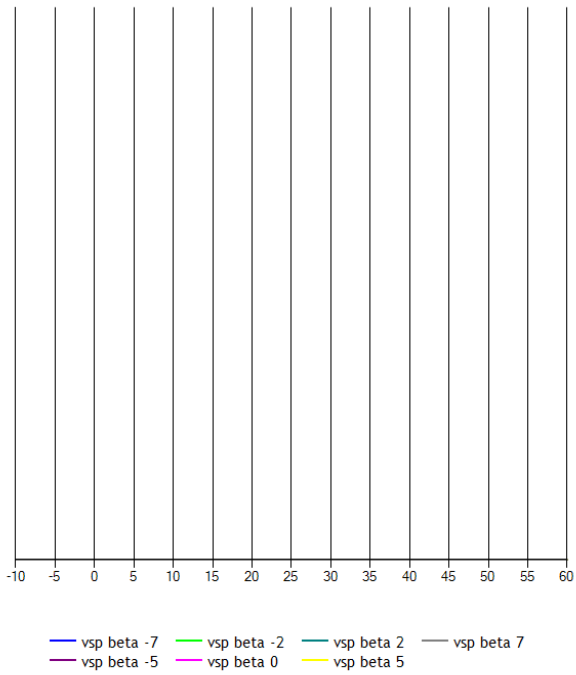
ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

CMLDED2L (alpha,beta,DED2L=-16)



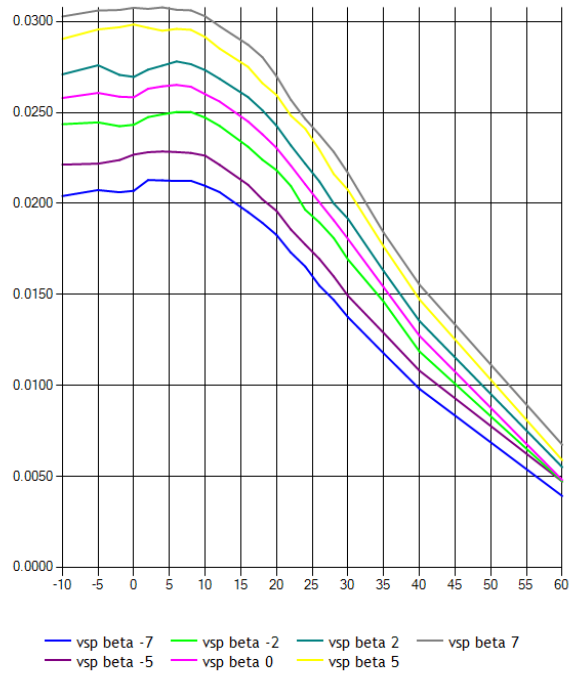
ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

CMLDED2L (alpha,beta,DED2L=0)



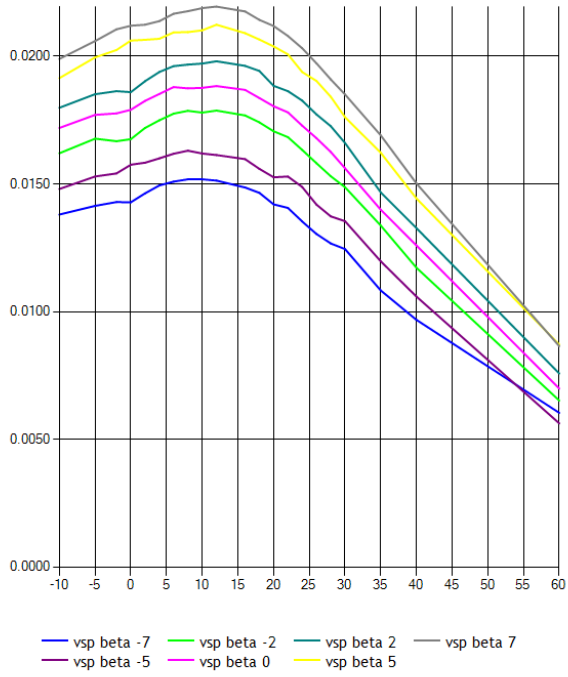
ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

CMLDED2L (alpha,beta,DED2L=25)



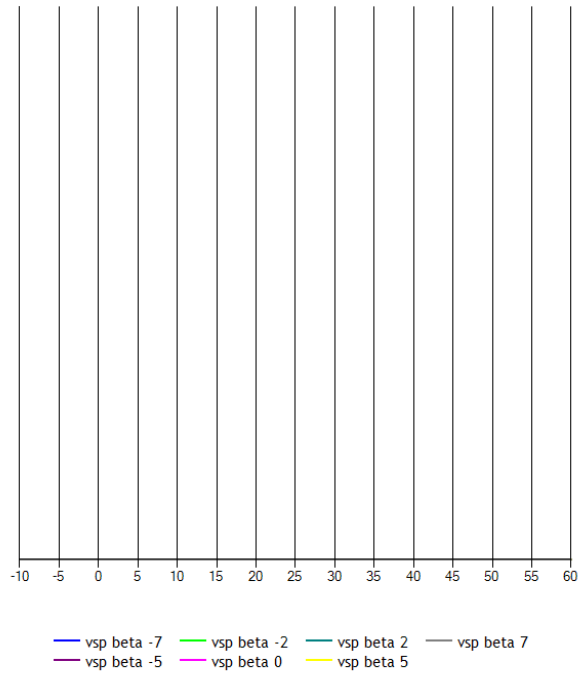
ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=-16)



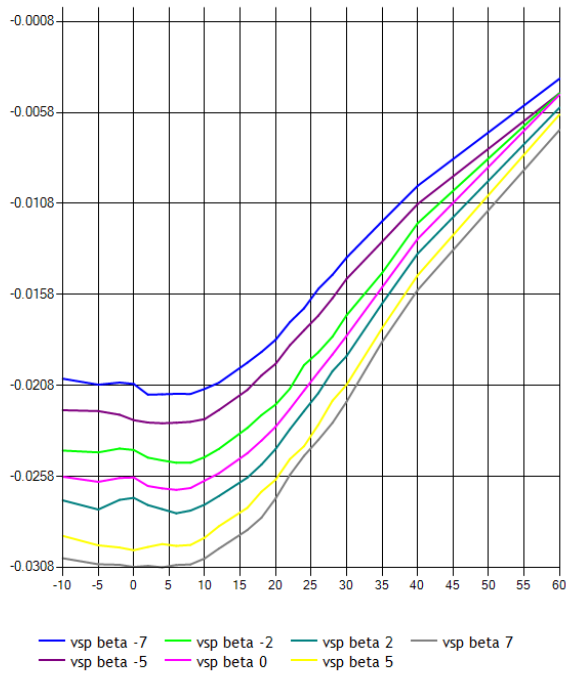
ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=0)



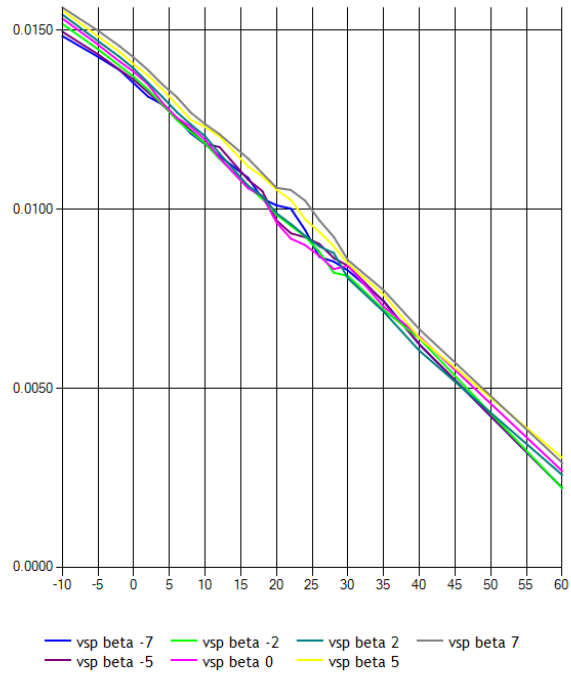
ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=25)



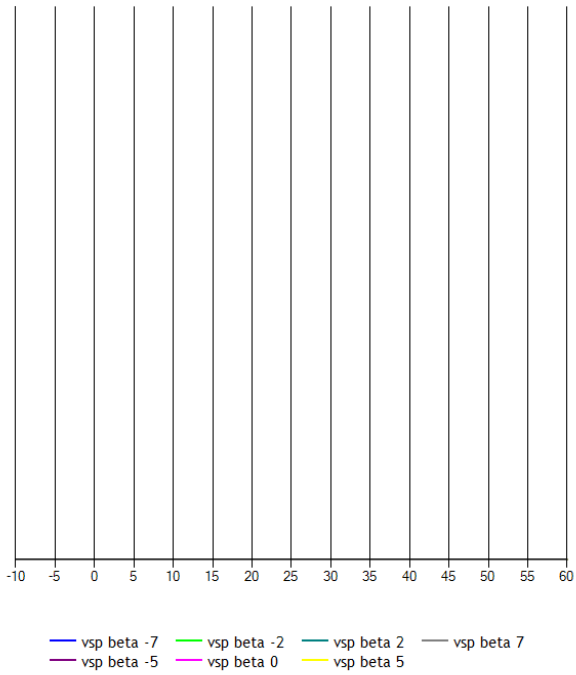
ROLLING MOMENT DUE TO RUDDER DEFLECTION

CMLDRD (alpha,beta,DRD=-25)



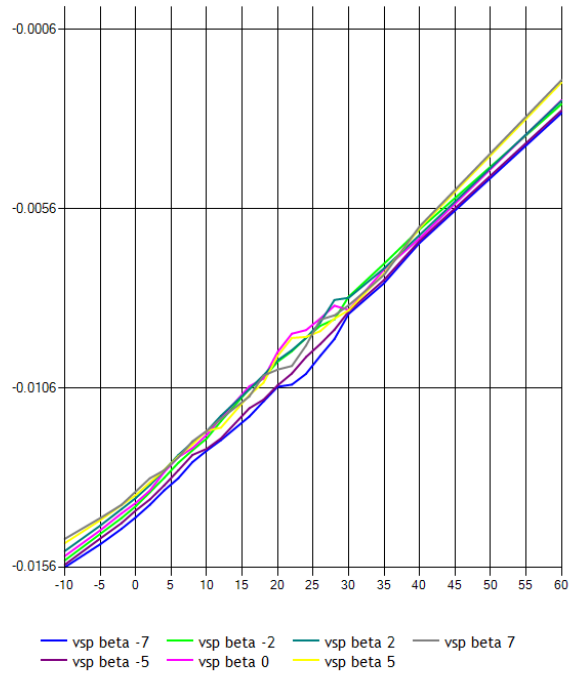
ROLLING MOMENT DUE TO RUDDER DEFLECTION

CMLDRD (alpha,beta,DRD=0)



ROLLING MOMENT DUE TO RUDDER DEFLECTION

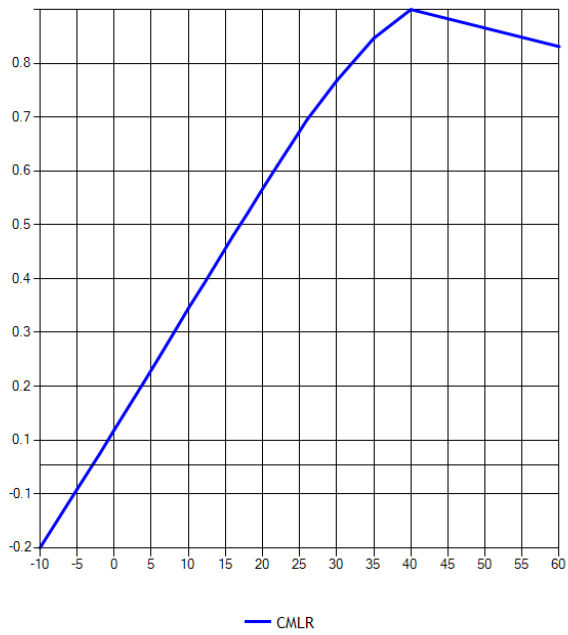
CMLDRD (alpha,beta,DRD=25)



ROLLING MOMENT DUE TO YAW RATE

CMLR(alpha)

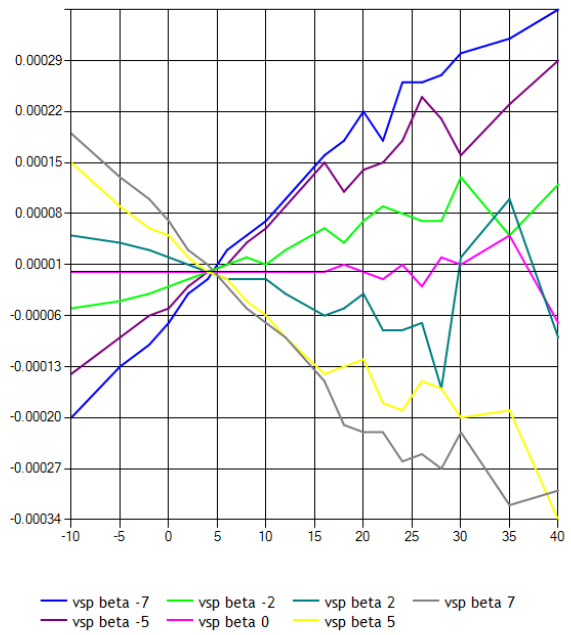
CMLR*RB



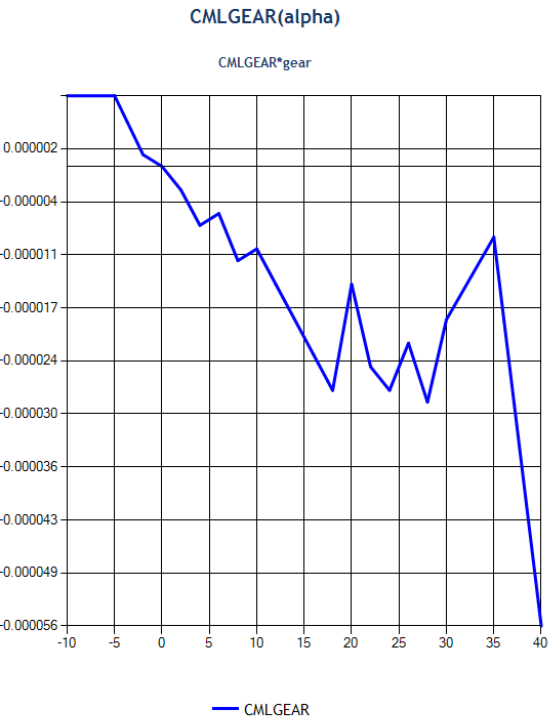
ROLLING MOMENT INCREMENT DUE TO CENTRE TANK

CMLCTNK(alpha,beta)

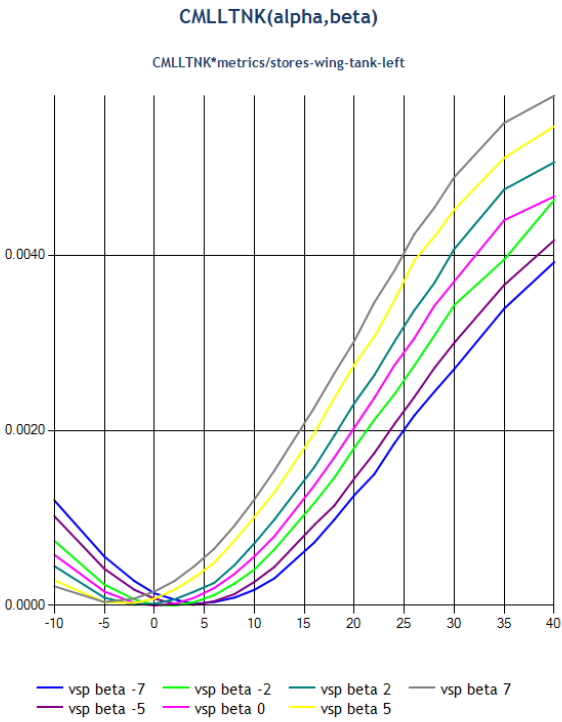
CMLCTNK*metrics/stores-centre-tank



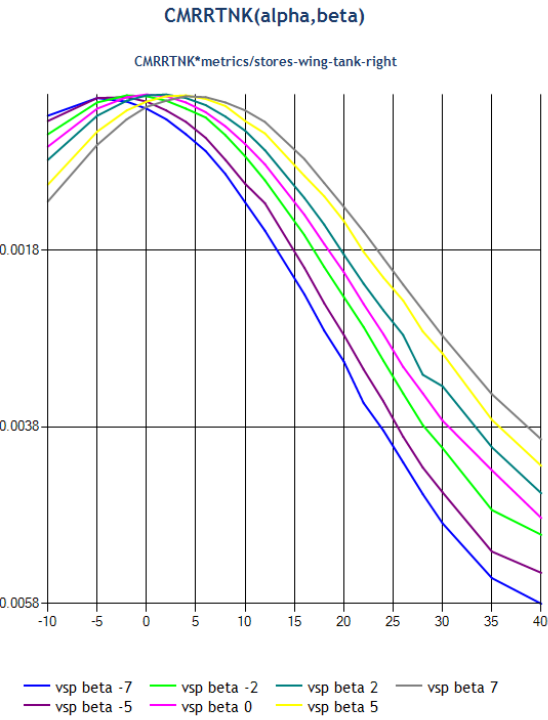
ROLLING MOMENT INCREMENT DUE TO GEAR



ROLLING MOMENT INCREMENT DUE TO LEFT WING TANK

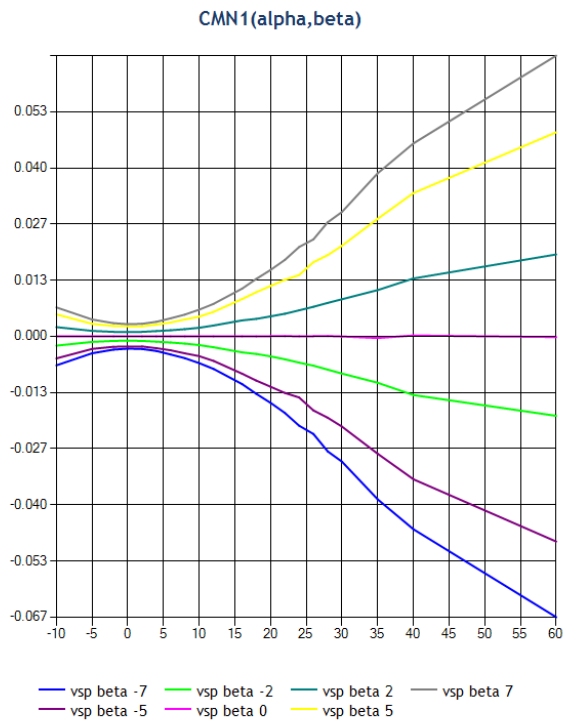


ROLLING MOMENT INCREMENT DUE TO RIGHT WING TANK

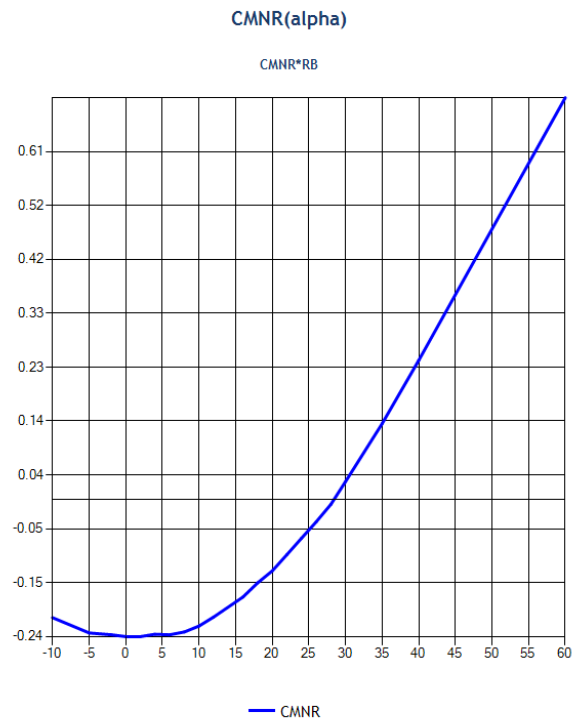


YAW

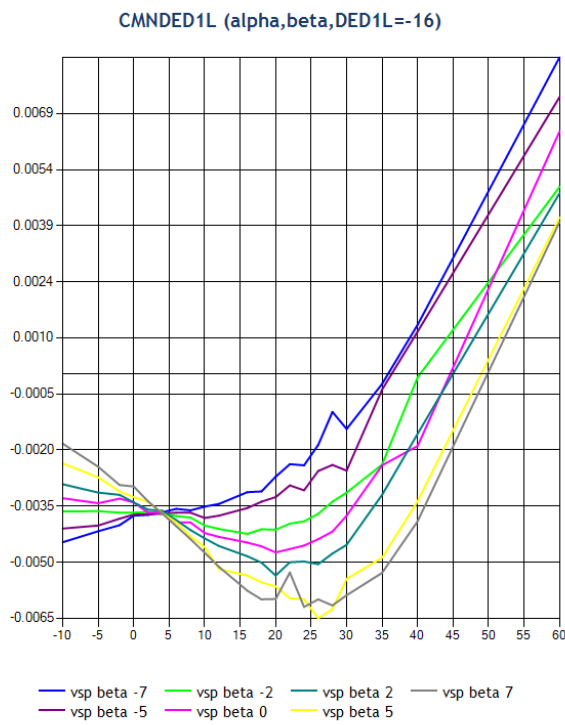
BASIC YAWING MOMENT



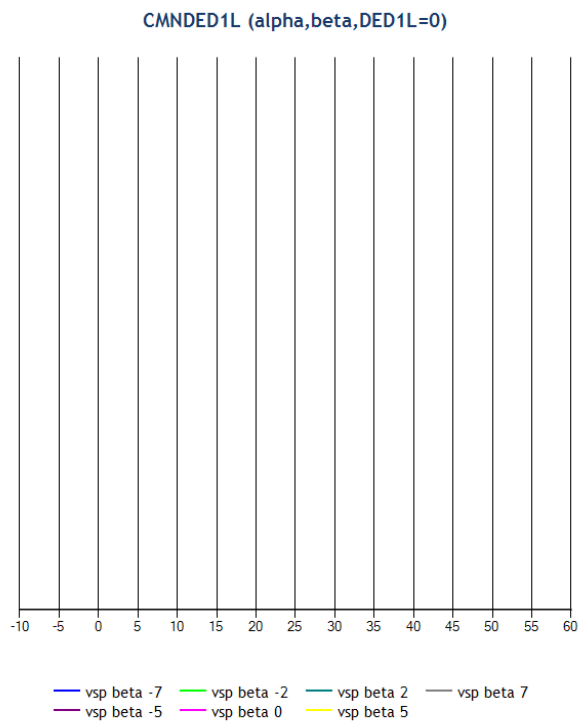
YAW DAMPING DERIVATIVE



YAW MOMENT DUE TO ELEVON 1L

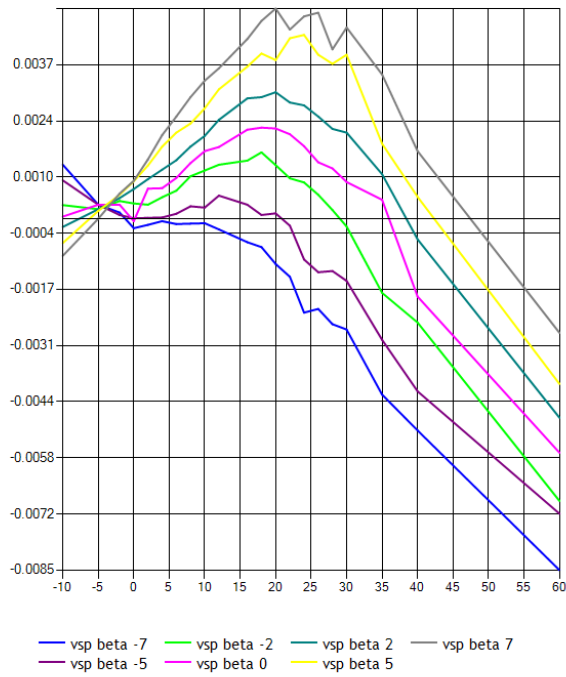


YAW MOMENT DUE TO ELEVON 1L



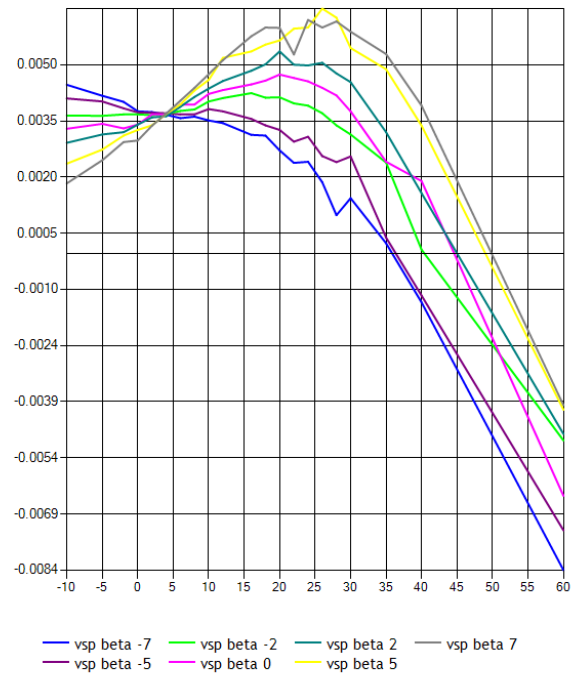
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=25)



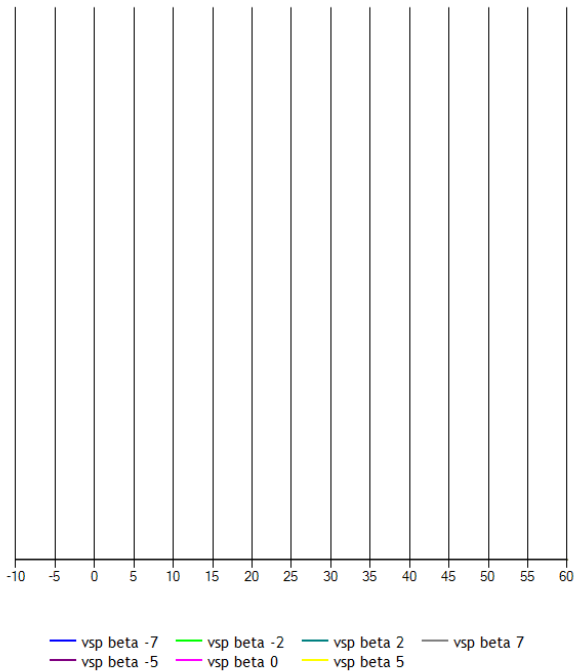
YAW MOMENT DUE TO ELEVON 1R

CMNDED1R (alpha,beta,DED1R=-16)



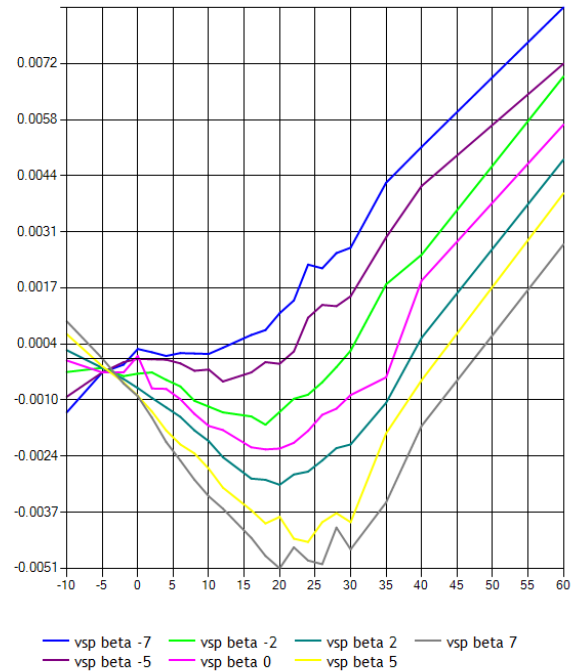
YAW MOMENT DUE TO ELEVON 1R

CMNDED1R (alpha,beta,DED1R=0)



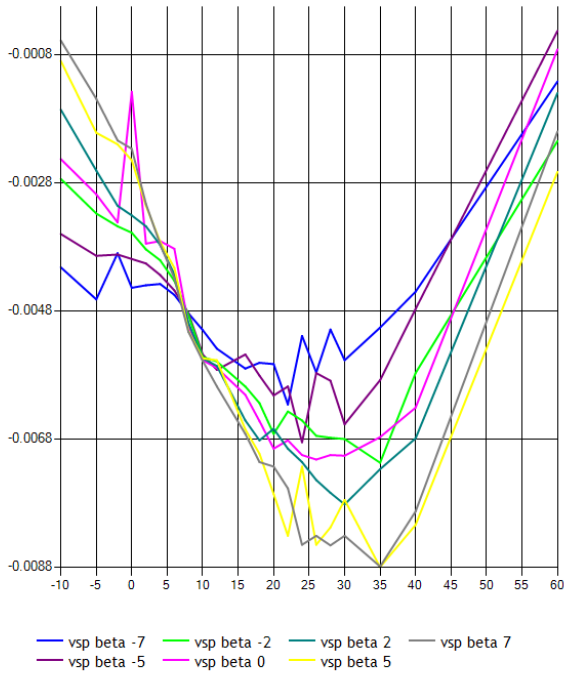
YAW MOMENT DUE TO ELEVON 1R

CMNDED1R (alpha,beta,DED1R=25)



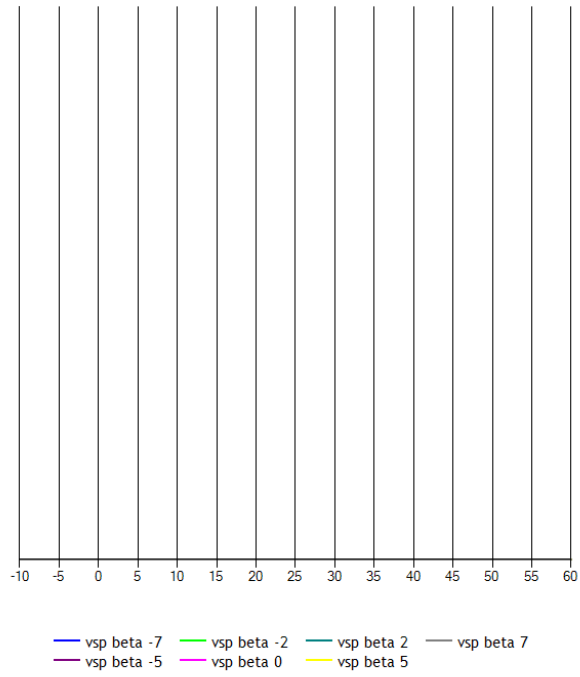
YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=-16)



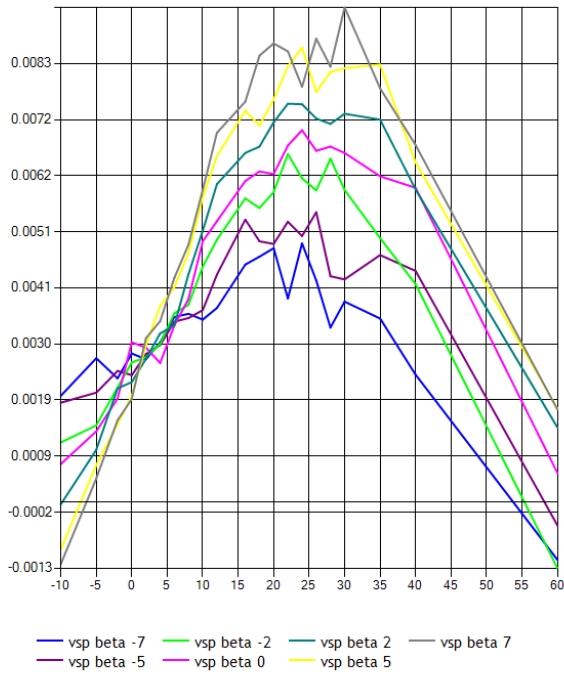
YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=0)



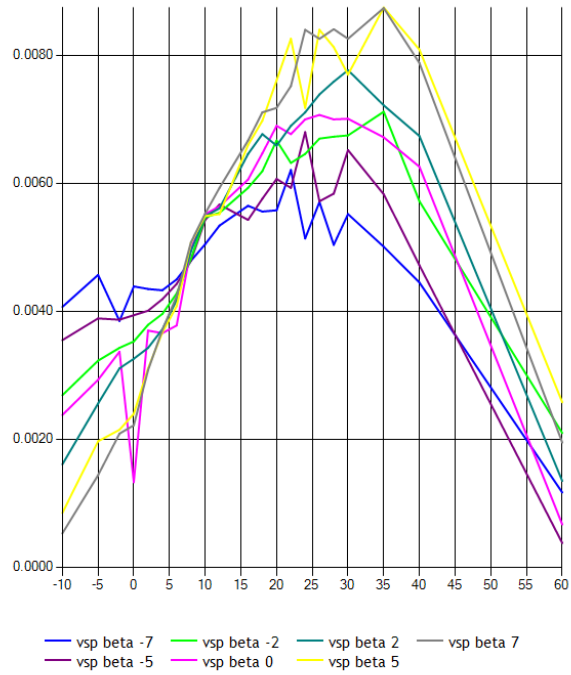
YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=25)



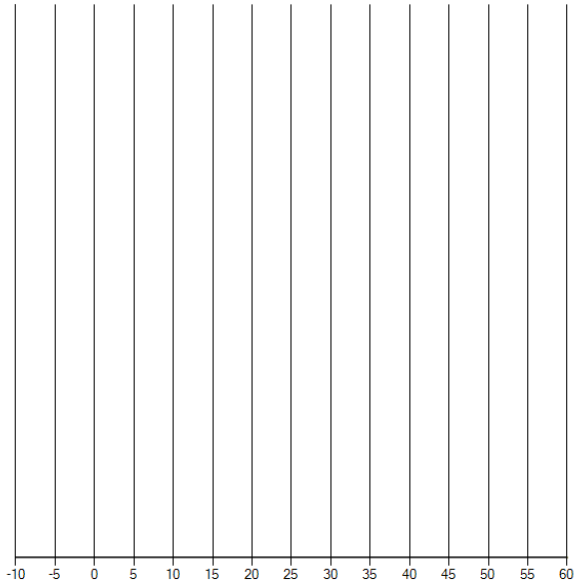
YAW MOMENT DUE TO ELEVON 2R

CMNDED2R (alpha,beta,DED2R=-16)



YAW MOMENT DUE TO ELEVON 2R

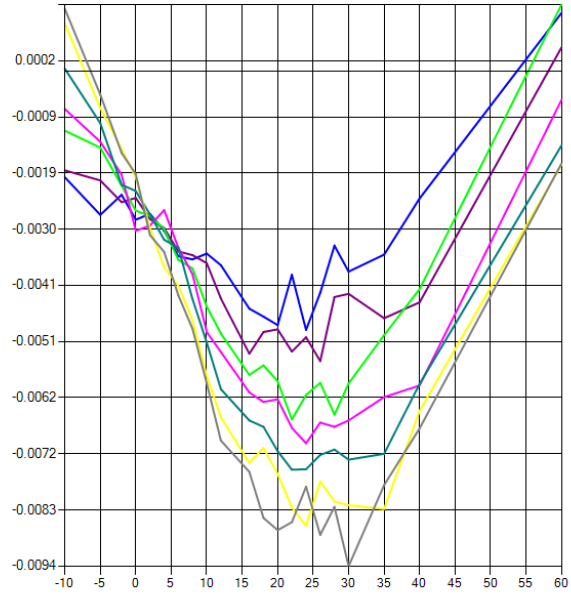
CMNDED2R (alpha,beta,DED2R=0)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

YAW MOMENT DUE TO ELEVON 2R

CMNDED2R (alpha,beta,DED2R=25)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

YAWING MOMENT DUE TO ROLL RATE

CMNP(alpha)

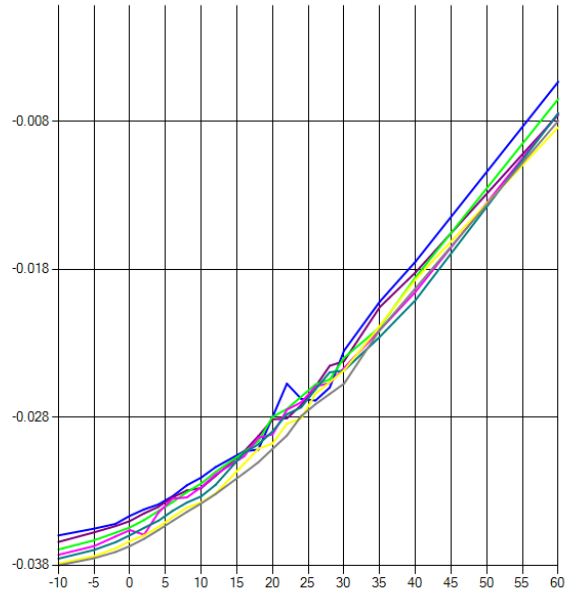
CMNP*PB



CMNP

YAWING MOMENT DUE TO RUDDER DEFLECTION

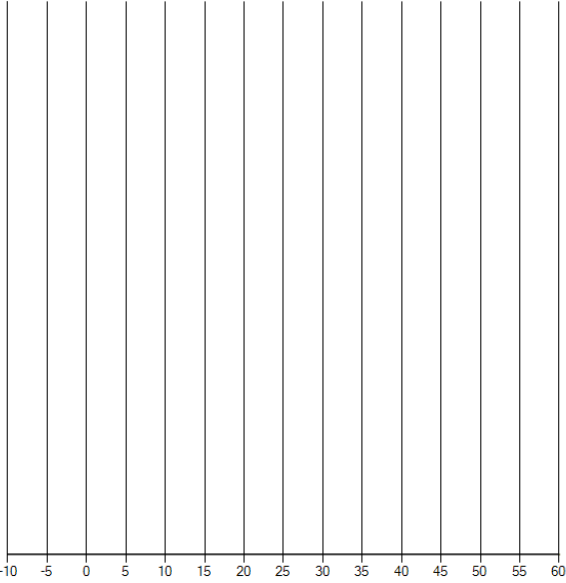
CMNDRDr (alpha,beta,DRD=-25)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

YAWING MOMENT DUE TO RUDDER DEFLECTION

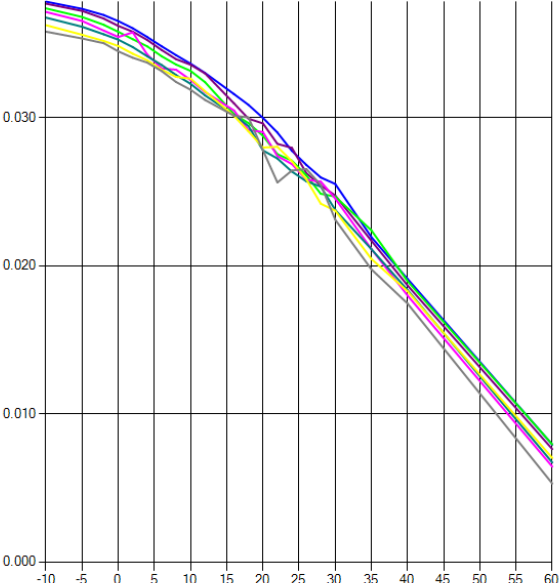
CMNDRDr (alpha,beta,DRD=0)



vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

YAWING MOMENT DUE TO RUDDER DEFLECTION

CMNDRDr (alpha,beta,DRD=25)

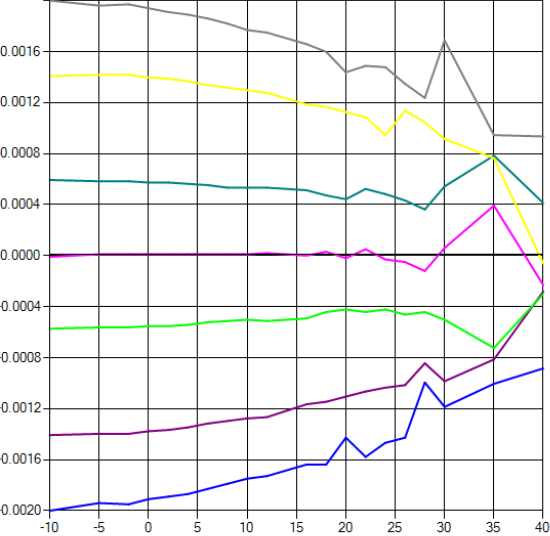


vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

YAWING MOMENT INCREMENT DUE TO CENTRE TANK

CMNCTNK(alpha,beta)

CMNCTNK*metrics/stores-centre-tank

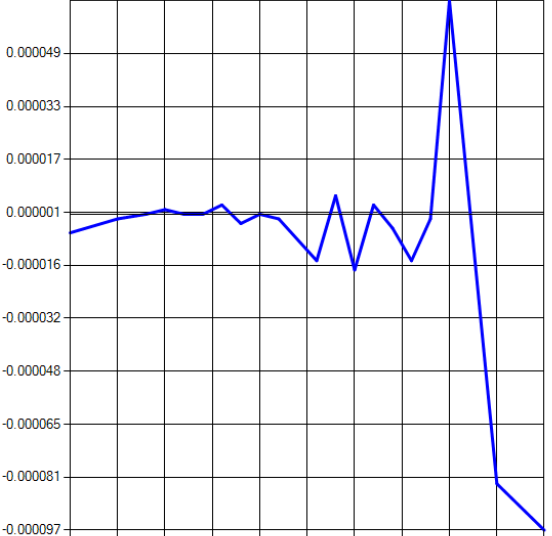


vsp beta -7 vsp beta -2 vsp beta 2 vsp beta 7
vsp beta -5 vsp beta 0 vsp beta 5

YAWING MOMENT INCREMENT DUE TO GEAR

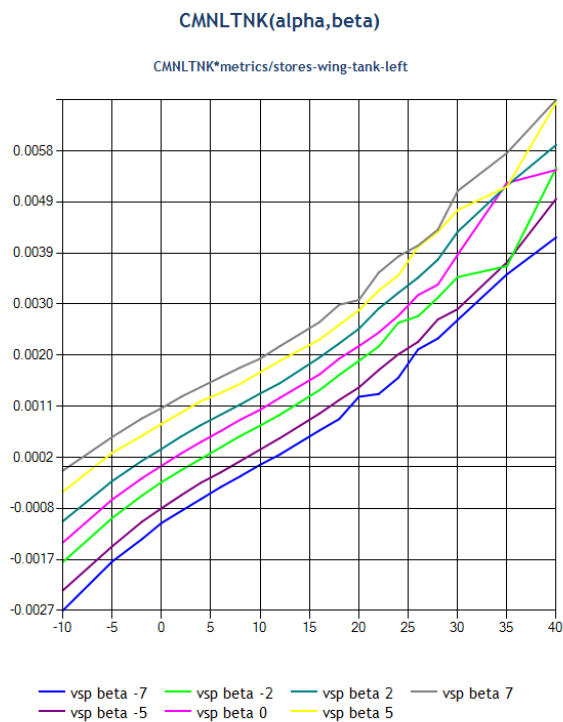
CMNGEAR(alpha)

CMNGEAR*gear

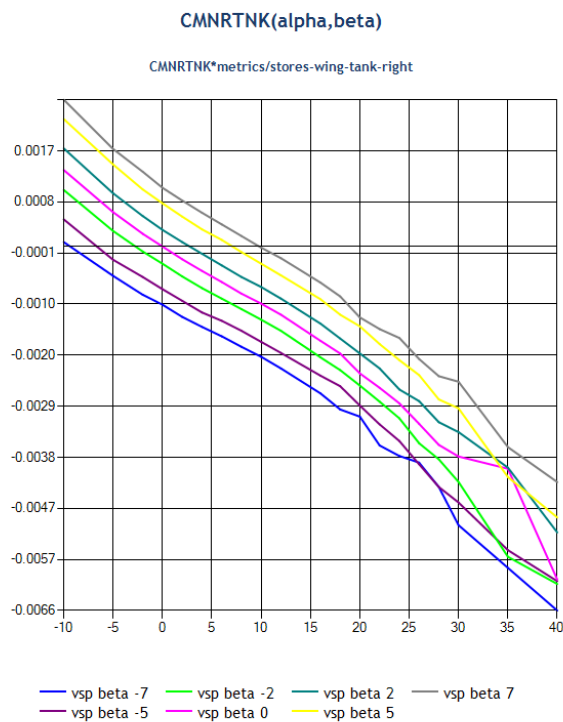


CMNGEAR

YAWING MOMENT INCREMENT DUE TO LEFT WING TANK



YAWING MOMENT INCREMENT DUE TO RIGHT WING TANK



References

1. Richard Harrison, rjh@zaretto.com: Mirage 2000-5 Aerodynamic data built from vspaero; AeroRP (8.56, 0, 0.5)M, ZDAT/AED/2017/09-08, September, 2017: <http://www.zaretto.com/sites/zaretto.com/files/Mirage2000-data-data/rjh-zaretto-Mirage2000-aerodynamic-data-vspaero.pdf>

Aircraft Metrics

Element	X	Y	Z	Unit
Aerodynamic Reference Point (CoP)	8.56	0.00	0.50	M
Aircraft CG	8.56	0.00	0.50	M

Element				Unit
Wingspan	7.87			M
Wing Area	28.17			M2
Chord	3.58			M
ClMax	-1.00			ND

Mass and balance

Element				Unit
Empty Weight	28000.00			LBS
IXX	6262.00			KG*M2
IYY	75686.00			KG*M2
IZZ	78802.00			KG*M2
IXZ	2141.00			KG*M2

Element	X	Y	Z	Unit	Weight
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Ground Reactions

Element	X	Y	Z	Unit	Index
NOSE_LG	4.01	0.00	-1.52	M	0
LEFT_MLG	8.76	-1.63	-1.46	M	1
RIGHT_MLG	8.76	1.63	-1.46	M	2
LEFT_WING_TIP	11.71	-4.53	-0.25	M	3
RIGHT_WING_TIP	11.71	4.53	-0.25	M	4
CANOPY	4.27	0.00	1.46	M	5
REAR_CANOPY	5.05	0.00	1.58	M	6
RADOME_FRONT	0.00	0.00	0.00	M	7
VERTICAL_TAIL_FRONT	13.06	0.00	3.63	M	8
VERTICAL_TAIL_REAR	13.72	0.00	3.54	M	9
REAR_BODY_LEFT	13.63	-0.50	0.53	M	10
REAR_BODY_RIGHT	13.63	0.50	0.53	M	11
LOWER_REAR_BODY	13.63	0.00	0.03	M	12
LOWER_MID_REAR_BODY	11.56	0.00	-0.32	M	13
REFUEL_PROBE	1.53	0.55	1.17	M	14
LEFT_STRAKE	5.21	-1.13	0.64	M	15
RIGHT_STRAKE	5.21	1.13	0.64	M	16
FRONT_LOWER_ANTENNA	2.35	0.00	-0.39	M	17
VSTAB_FRONT_ANTENNA	11.98	0.00	3.06	M	18
VSTAB_REAR_ANTENNA	13.74	0.00	2.98	M	19
CHUTE	13.83	0.00	1.21	M	20

Propulsion

Element	X	Y	Z	Unit	Feed
SNECMA_M53-P2	18.11	0.00	0.50	M	Feed line [0],External Tank [1],Right Wing Tank [2],Left Wing Tank [3],Main Tank [4]

Tanks

Element	X	Y	Z	Unit	Capacity	Id	Priority	Standpipe
Feed line	8.56	0.00	0.50	M	10 LBS	0	1	
External Tank	8.56	0.00	0.01	M	1200 KG	1	2	50 KG
Right Wing Tank	8.56	4.00	0.10	M	385 LBS	2	3	100 LBS
Left Wing Tank	8.56	-4.00	0.10	M	385 LBS	3	3	100 LBS
Main Tank	8.56	0.00	0.50	M	2128 KG	4	4	50 KG

Systems

Name

Mirage-2000-hydraulics
Mirage-2000-electrics
Mirage-2000-avionics
Mirage-2000-ecs
Mirage-2000-fadec
Mirage-2000-engines-Snecma-M53
Mirage-2000-fcs

Independent variables

Name
aero/alpha-deg
aero/beta-deg
aero/pb
aero/qb
aero/rb
fcs/airbrake-lower
fcs/airbrake-upper
fcs/elevon-1L-pos-deg
fcs/elevon-1R-pos-deg
fcs/elevon-2L-pos-deg
fcs/elevon-2R-pos-deg
fcs/rudder-pos-deg
fcs/slat-1L-pos-deg
fcs/slat-2L-pos-deg
gear/gear-pos-norm
metrics/stores-centre-tank
metrics/stores-wing-tank-left
metrics/stores-wing-tank-right
velocities/mach