

# Dassault Mirage 2000-5 Aerodynamic data built from vspaero; CG (6.641, 0, 1.317)M, 2019-09-06 23:45

Richard Harrison, rjh@zaretto.com, ZDAT/AED/2017/09-08.

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AeroDetail=Medium, Gear, Flaps, WakeIterations=1

## 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 1L
CFXDSD1R	alpha	DRAG	DRAG DUE TO LE SLAT 1R
CFXDSD2L	alpha	DRAG	DRAG DUE TO LE SLAT 2L
CFXDSD2R	alpha	DRAG	DRAG DUE TO LE SLAT 2R
CFXDSBL	alpha	DRAG	DRAG DUE TO LOWER SPEEDBRAKE DEFLECTION
CFXDSBU	alpha	DRAG	DRAG DUE TO UPPER SPEEDBRAKE DEFLECTION
CFXGEAR	alpha	DRAG	DRAG INCREMENT DUE TO GEAR
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
CFZDSD1L	alpha	LIFT	LIFT DUE TO LE SLAT 1L
CFZDSD1R	alpha	LIFT	LIFT DUE TO LE SLAT 1R
CFZDE2L	alpha	LIFT	LIFT DUE TO LE SLAT 2L
CFZDE2R	alpha	LIFT	LIFT DUE TO LE SLAT 2R
CFZDEL	alpha	LIFT	LIFT DUE TO LOWER SPEEDBRAKE DEFLECTION
CFZDSBU	alpha	LIFT	LIFT DUE TO UPPER SPEEDBRAKE DEFLECTION
CFZGEAR	alpha	LIFT	LIFT INCREMENT DUE TO GEAR
CMM1	alpha	PITCH	BASIC PITCHING MOMENT
CMMQ	alpha	PITCH	PITCH DAMPING DERIVATIVE
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
CMMDSD1L	alpha	PITCH	PITCH MOMENT DUE TO LE SLAT 1L
CMMDSD1R	alpha	PITCH	PITCH MOMENT DUE TO LE SLAT 1R

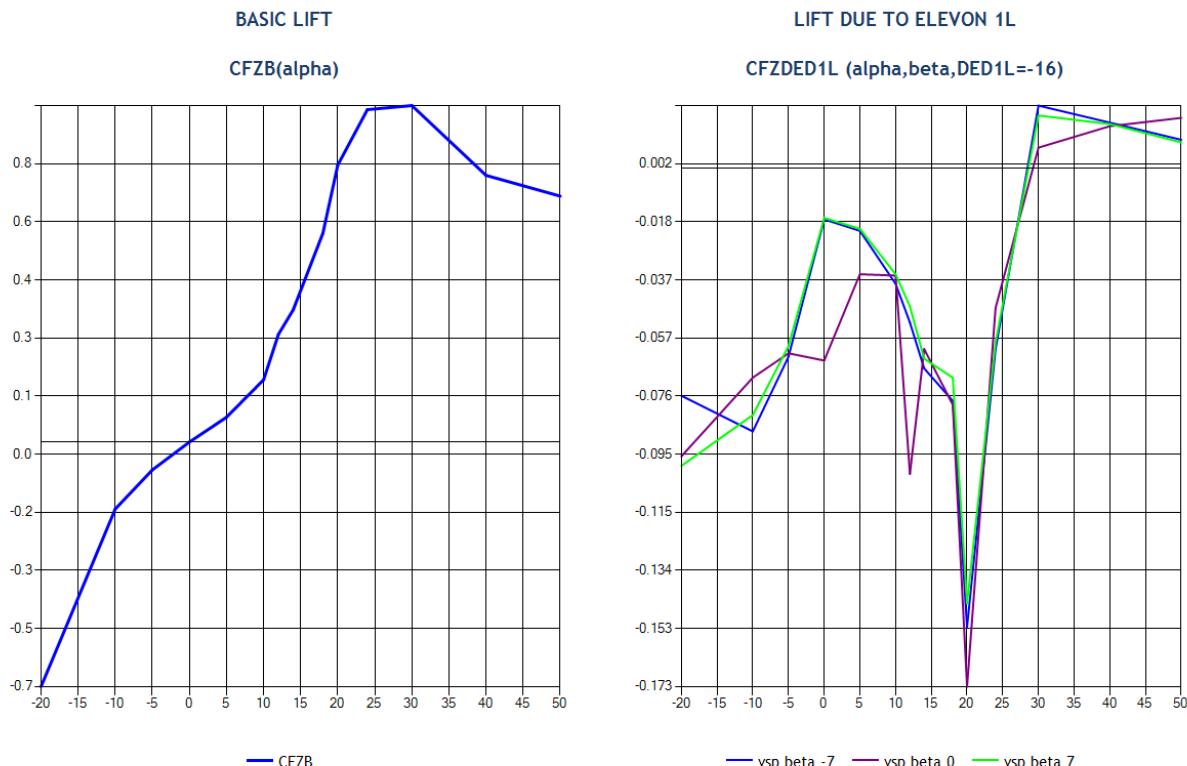
CMMDS2L	alpha	PITCH	PITCH MOMENT DUE TO LE SLAT 2L
CMMDS2R	alpha	PITCH	PITCH MOMENT DUE TO LE SLAT 2R
CMMDSBL	alpha	PITCH	PITCH MOMENT DUE TO LOWER SPEEDBRAKE DEFLECTION
CMMDSBU	alpha	PITCH	PITCH MOMENT DUE TO UPPER SPEEDBRAKE DEFLECTION
CMMGEAR	alpha	PITCH	PITCHING MOMENT INCREMENT DUE TO GEAR
CML1	alpha,beta	ROLL	BASIC ROLLING MOMENT
CMLP	alpha	ROLL	ROLL DAMPING DERIVATIVE
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
CMLDSD1L	alpha	ROLL	ROLLING MOMENT DUE TO LE SLAT 1L DEFLECTION
CMLDSD1R	alpha	ROLL	ROLLING MOMENT DUE TO LE SLAT 1R DEFLECTION
CMLDSD2L	alpha	ROLL	ROLLING MOMENT DUE TO LE SLAT 2L DEFLECTION
CMLDSD2R	alpha	ROLL	ROLLING MOMENT DUE TO LE SLAT 2R DEFLECTION
CMLDRD	alpha,beta,DRD	ROLL	ROLLING MOMENT DUE TO RUDDER DEFLECTION
CMLR	alpha	ROLL	ROLLING MOMENT DUE TO YAW RATE
CMLGEAR	alpha	ROLL	ROLLING MOMENT INCREMENT DUE TO GEAR
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
CFYDSD1L	alpha	SIDE	SIDE FORCE DUE TO LE SLAT 1L DEFLECTION
CFYDSD1R	alpha	SIDE	SIDE FORCE DUE TO LE SLAT 1R DEFLECTION
CFYDSD2L	alpha	SIDE	SIDE FORCE DUE TO LE SLAT 2L DEFLECTION
CFYDSD2R	alpha	SIDE	SIDE FORCE DUE TO LE SLAT 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
CFYGEAR	alpha	SIDE	SIDE FORCE INCREMENT DUE TO GEAR
CMN1	alpha,beta	YAW	BASIC YAWING 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
CMNDSD1L	alpha	YAW	YAW MOMENT DUE TO LE SLAT 1L

CMNDSD1R	alpha	YAW	YAW MOMENT DUE TO LE SLAT 1R
CMNDSD2L	alpha	YAW	YAW MOMENT DUE TO LE SLAT 2L
CMNDSD2R	alpha	YAW	YAW MOMENT DUE TO LE SLAT 2R
CMNP	alpha	YAW	YAWING MOMENT DUE TO ROLL RATE
CMNDRDr	alpha,beta,DRD	YAW	YAWING MOMENT DUE TO RUDDER DEFLECTION
CMNGEAR	alpha	YAW	YAWING MOMENT INCREMENT DUE TO GEAR

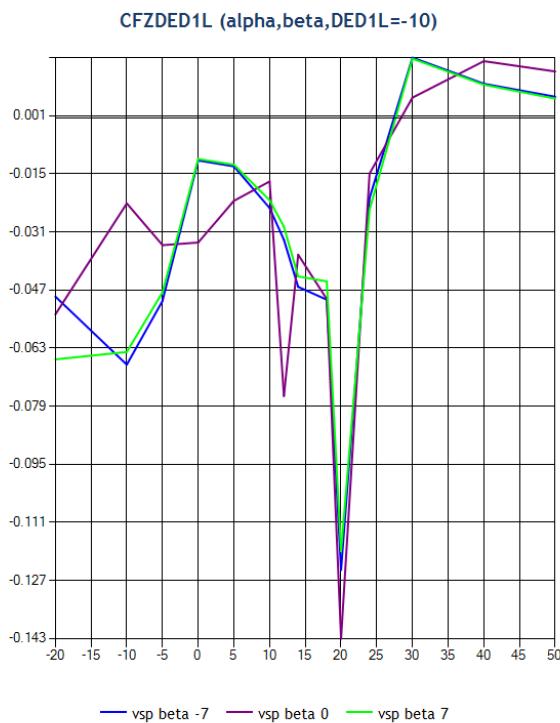
## Coefficient Buildup

Axis	Buildup
DRAG	CFXDSD1L*DSD1L + CFXDSD1R*DSD1R + CFXDSD2L*DSD2L + CFXDSD2R*DSD2R + CFXDSBU*DSBU + CFXDSBL*DSBL + CFXGEAR*gear + CFXB + CFXDED1L + CFXDED1R + CFXDED2L + CFXDED2R
SIDE	CFYDSD1L*DSD1L + CFYDSD1R*DSD1R + CFYDSD2L*DSD2L + CFYDSD2R*DSD2R + CFYGEAR*gear + CFYB + CFYDED1L + CFYDED1R + CFYDED2L + CFYDED2R + CFYDRD + CFYP*PB + CFYR*RB
LIFT	CFZDSD1L*DSD1L + CFZDSD1R*DSD1R + CFZDE2L*DSD2L + CFZDE2R*DSD2R + CFZDSBU*DSBU + CFZDEL*DSBL + CFZGEAR*gear + CFZB + CFZDED1L + CFZDED1R + CFZDE2L + CFZDE2R
ROLL	CMLDSD1L*DSD1L + CMLDSD1R*DSD1R + CMLDSD2L*DSD2L + CMLDSD2R*DSD2R + CMLGEAR*gear + CML1 + CMLDED1L + CMLDED1R + CMLDED2L + CMLDED2R + CMLRD + CMLP*PB + CMLR*RB + (DLNB*BETA)
PITCH	CMMDSDF1L*DSD1L + CMMDSDF1R*DSD1R + CMMDSDF2L*DSD2L + CMMDSDF2R*DSD2R + CMMDSBU*DSBU + CMMDSBL*DSBL + CMMGEAR*gear + CMM1 + CMMQ*QB + CMMDED1L + CMMDED1R + CMMDED2L + CMMDED2R
YAW	CMNDSD1L*DSD1L + CMNDSD1R*DSD1R + CMNDSD2L*DSD2L + CMNDSD2R*DSD2R + CMNGEAR*gear + CMN1 + CMNDED1L + CMNDED1R + CMNDED2L + CMNDED2R + CMNDRDr + CMNP*PB + CMNR*RB + (DCNB*BETA)

## LIFT



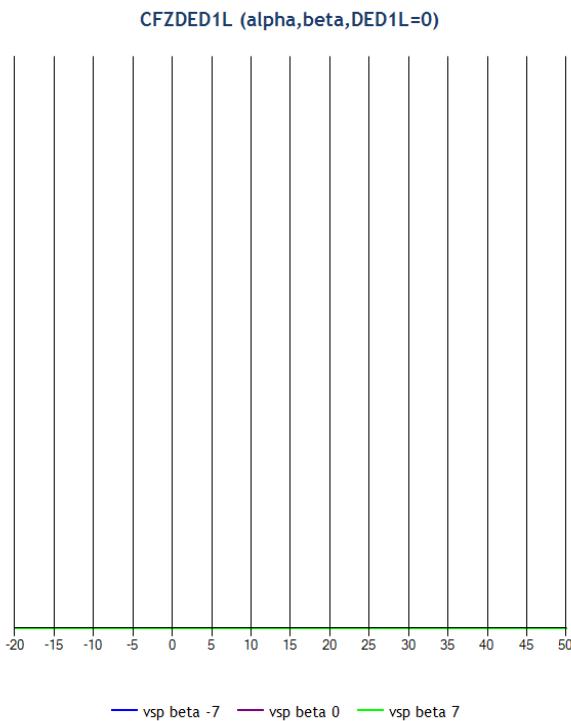
LIFT DUE TO ELEVON 1L



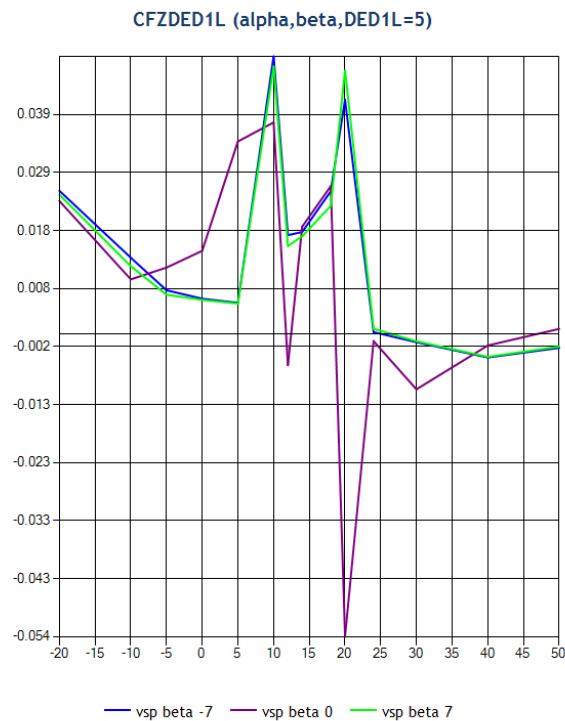
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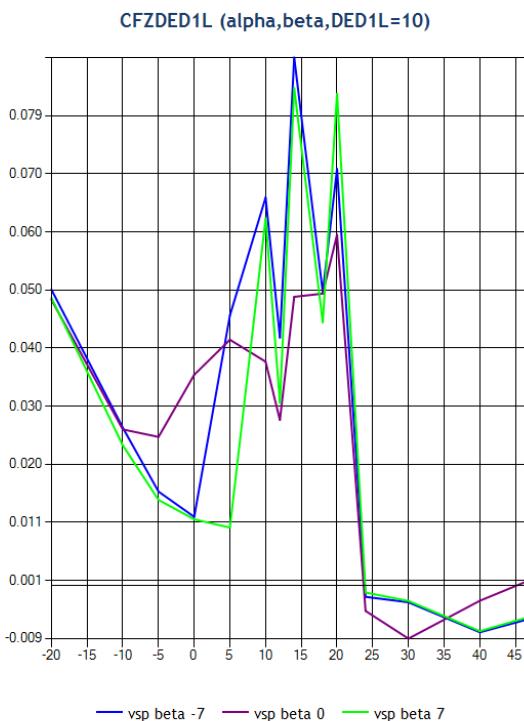
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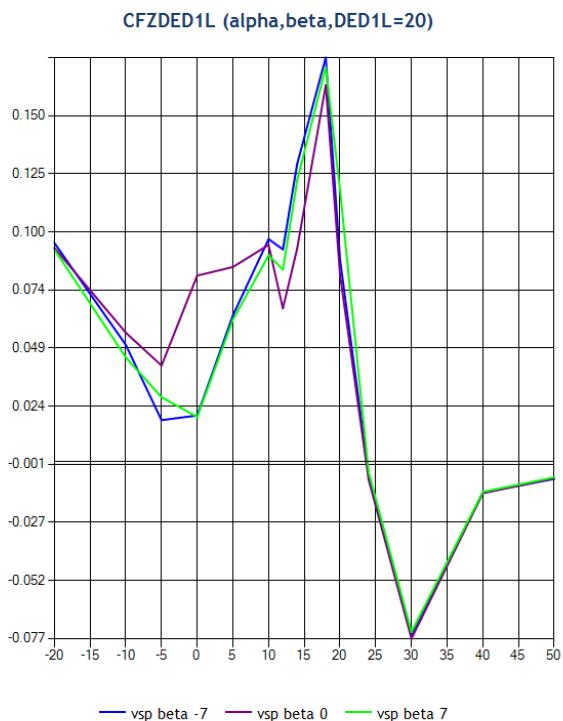
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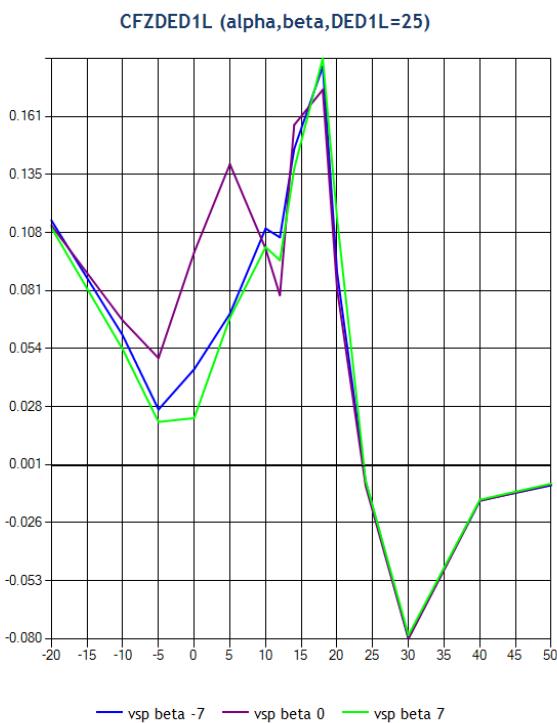
LIFT DUE TO ELEVON 1L



LIFT DUE TO ELEVON 1L



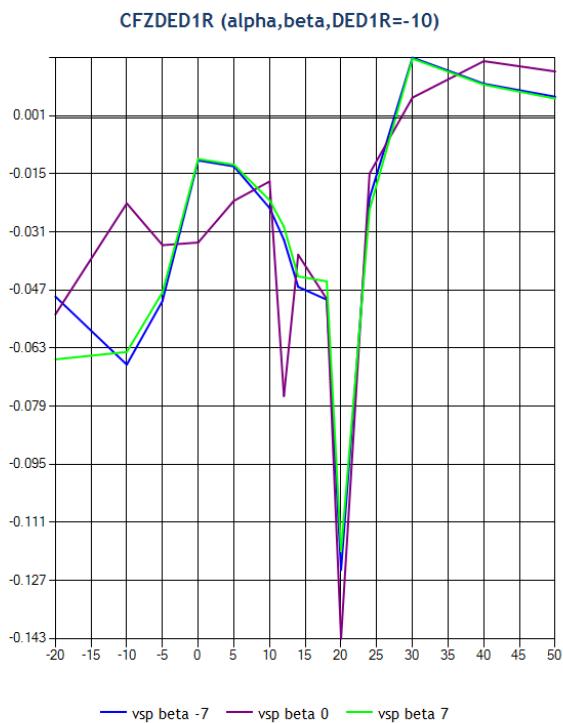
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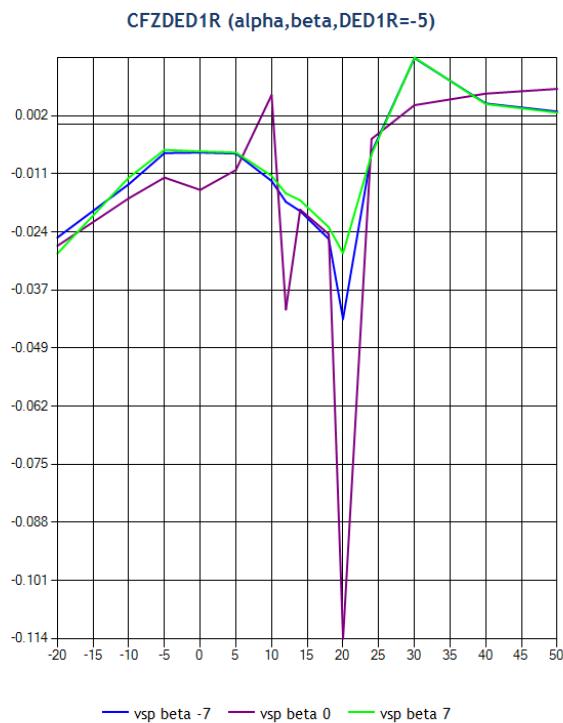
LIFT DUE TO ELEVON 1R



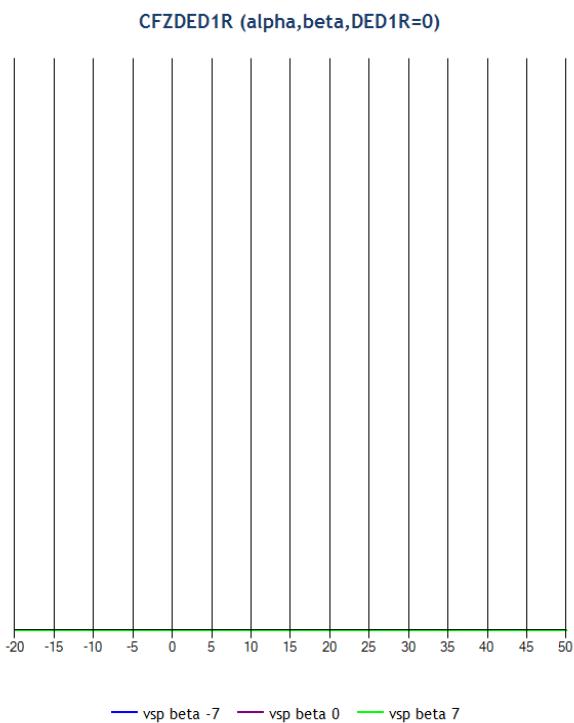
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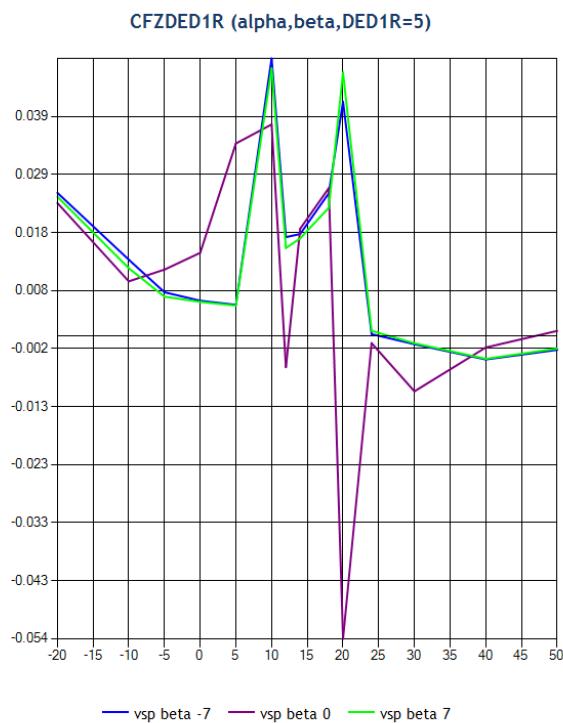
LIFT DUE TO ELEVON 1R



LIFT DUE TO ELEVON 1R

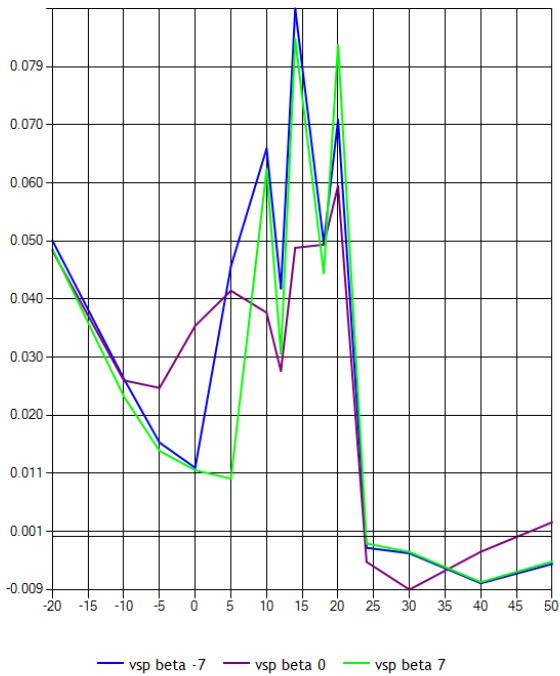


LIFT DUE TO ELEVON 1R



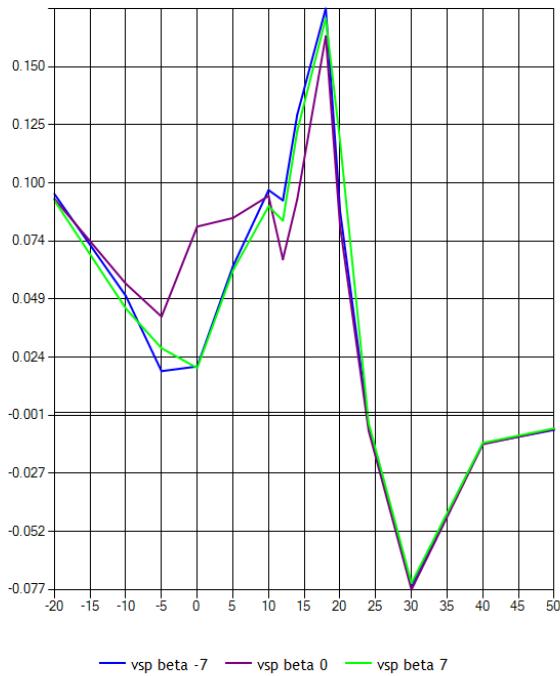
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CFZDED1R (alpha,beta,DED1R=10)



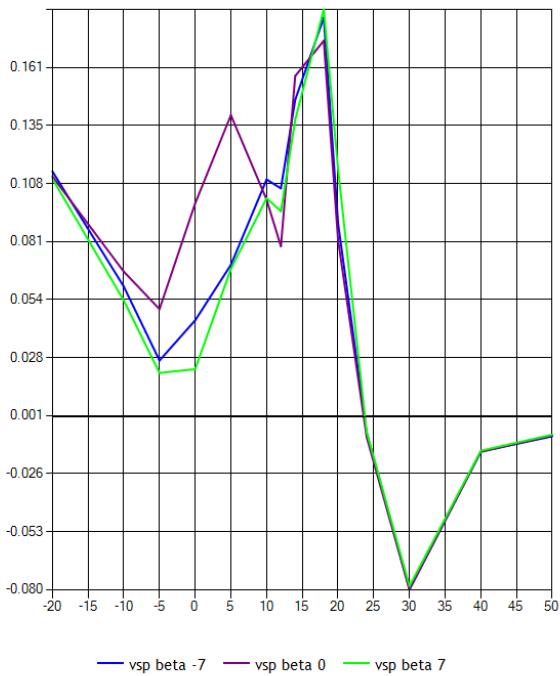
### LIFT DUE TO ELEVON 1R

CFZDED1R (alpha,beta,DED1R=20)



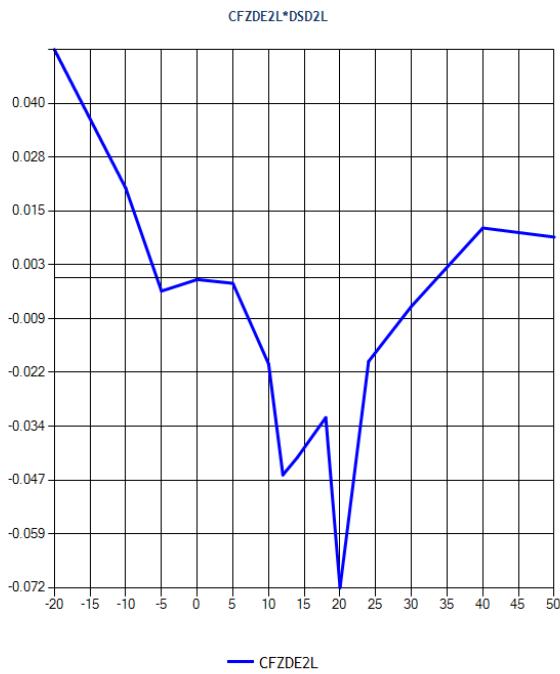
### LIFT DUE TO ELEVON 1R

CFZDED1R (alpha,beta,DED1R=25)

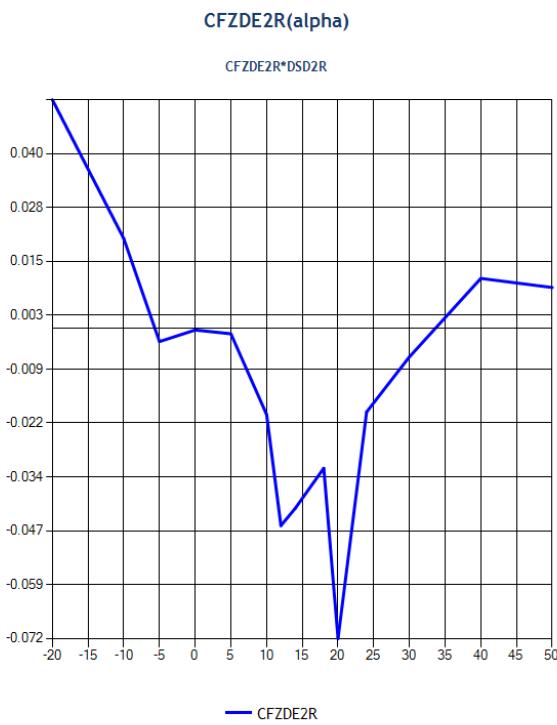


### LIFT DUE TO LE SLAT 2L

CFZDE2L(alpha)



LIFT DUE TO LE SLAT 2R



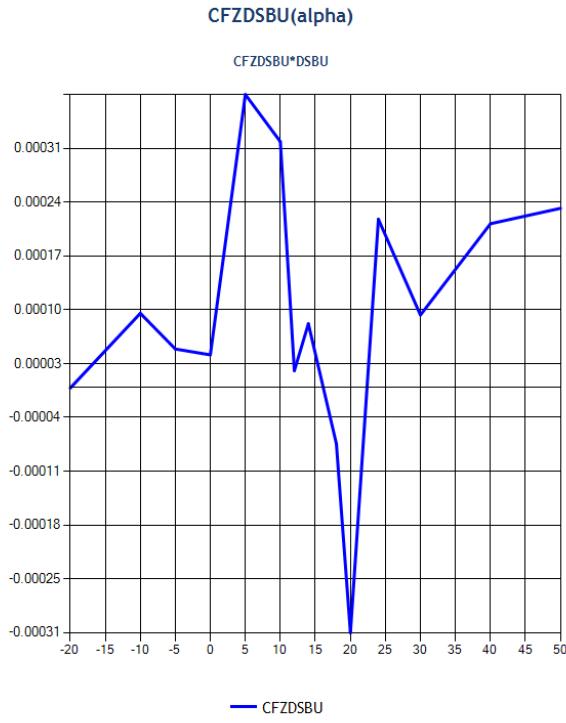
LIFT DUE TO LE SLAT 1L



LIFT DUE TO LE SLAT 1R



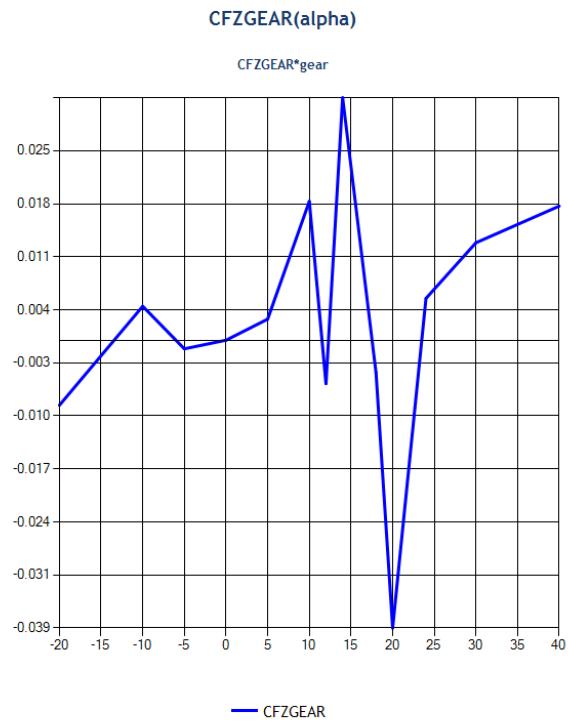
LIFT DUE TO UPPER SPEEDBRAKE DEFLECTION



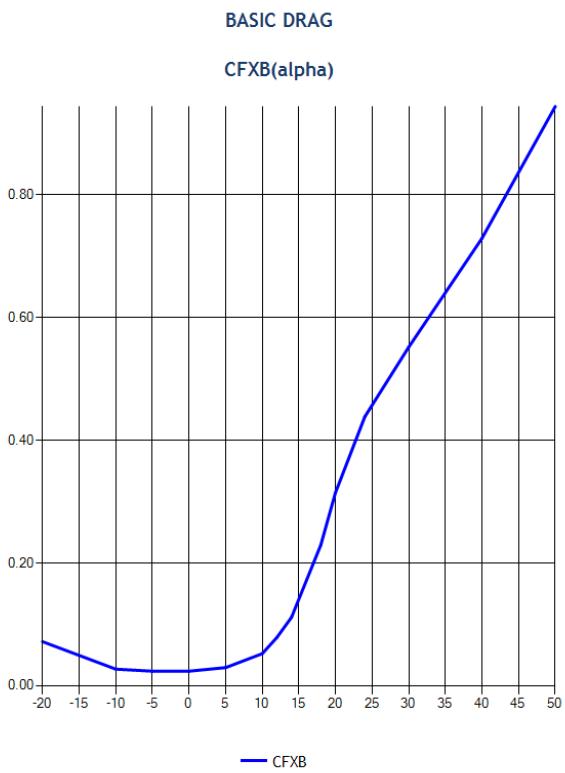
### LIFT DUE TO LOWER SPEEDBRAKE DEFLECTION



### LIFT INCREMENT DUE TO GEAR



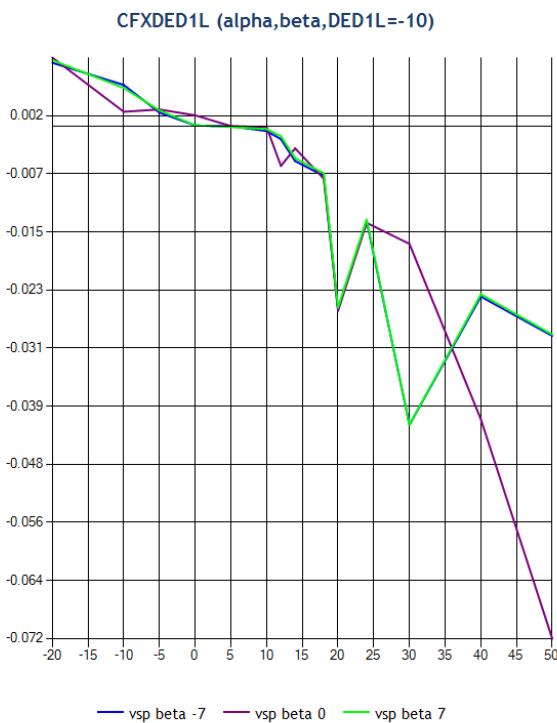
## DRAG



### DRAG DUE TO ELEVON 1L



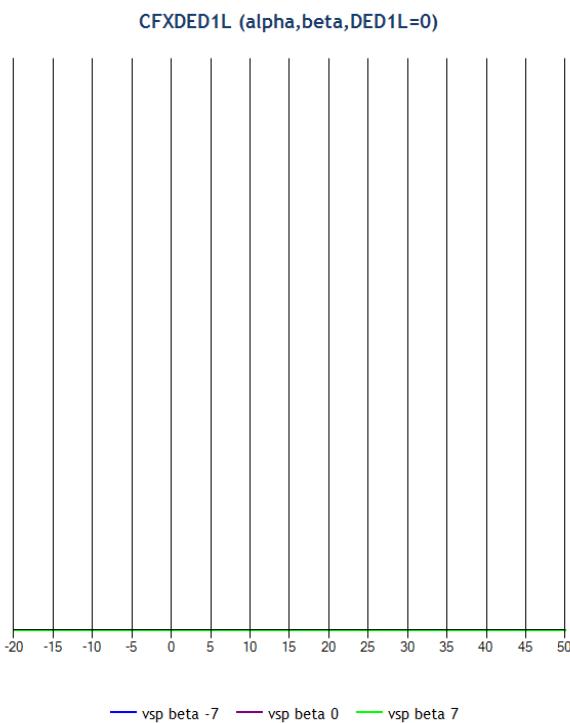
DRAG DUE TO ELEVON 1L



DRAG DUE TO ELEVON 1L



DRAG DUE TO ELEVON 1L



DRAG DUE TO ELEVON 1L



DRAG DUE TO ELEVON 1L



DRAG DUE TO ELEVON 1L



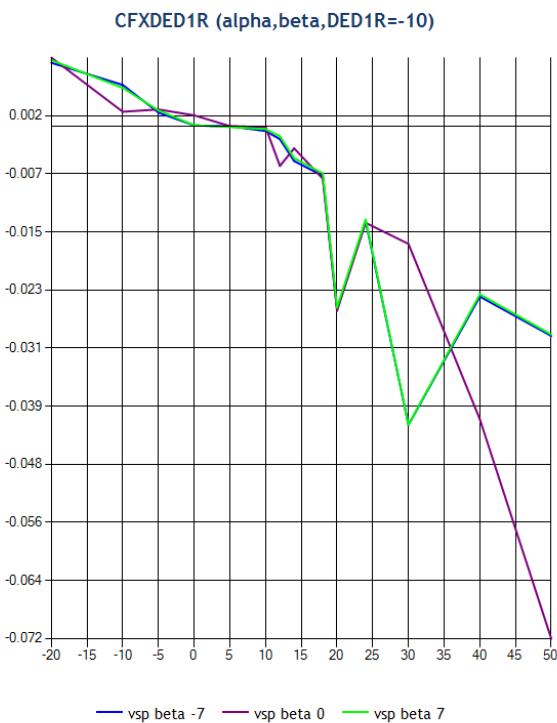
DRAG DUE TO ELEVON 1L



DRAG DUE TO ELEVON 1R



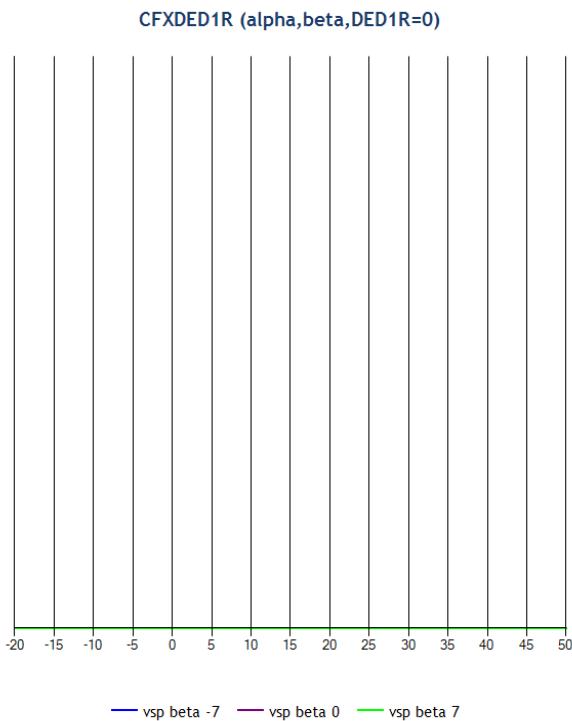
DRAG DUE TO ELEVON 1R



DRAG DUE TO ELEVON 1R



DRAG DUE TO ELEVON 1R



DRAG DUE TO ELEVON 1R



### DRAG DUE TO ELEVON 1R



### DRAG DUE TO ELEVON 1R



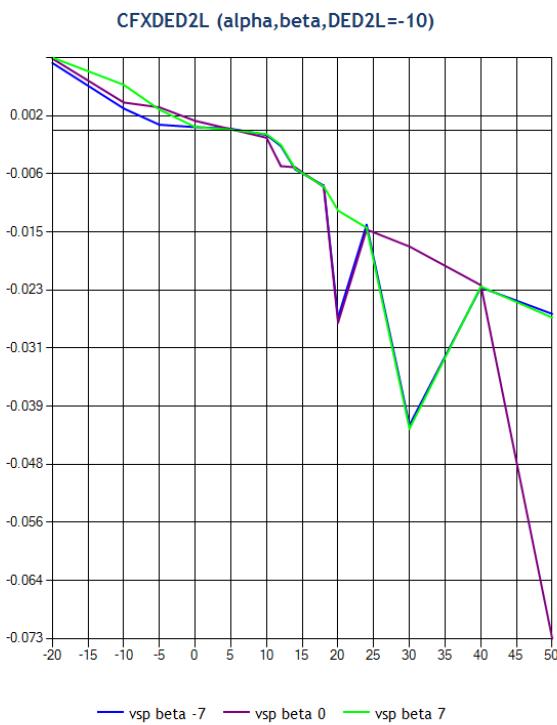
### DRAG DUE TO ELEVON 1R



### DRAG DUE TO ELEVON 2L



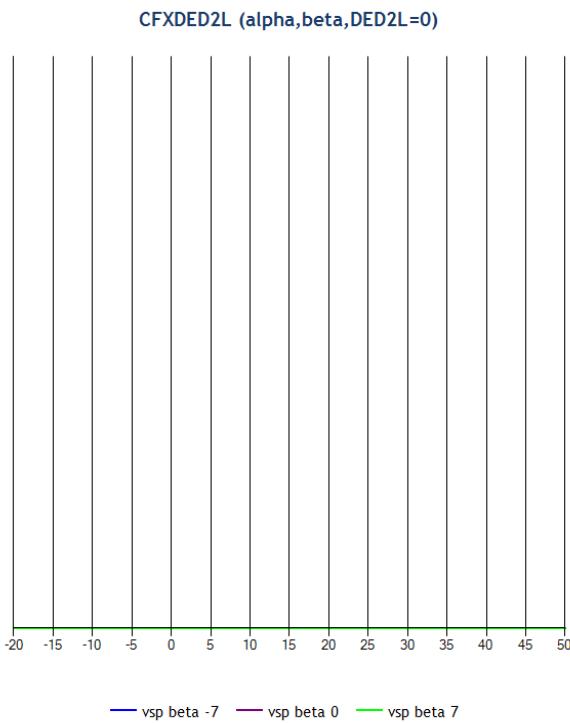
DRAG DUE TO ELEVON 2L



DRAG DUE TO ELEVON 2L



DRAG DUE TO ELEVON 2L



DRAG DUE TO ELEVON 2L



DRAG DUE TO ELEVON 2L



DRAG DUE TO ELEVON 2L



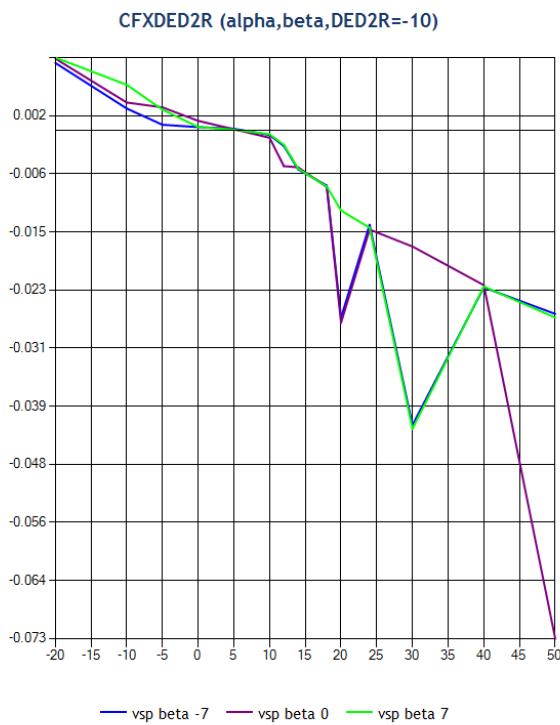
DRAG DUE TO ELEVON 2L



DRAG DUE TO ELEVON 2R



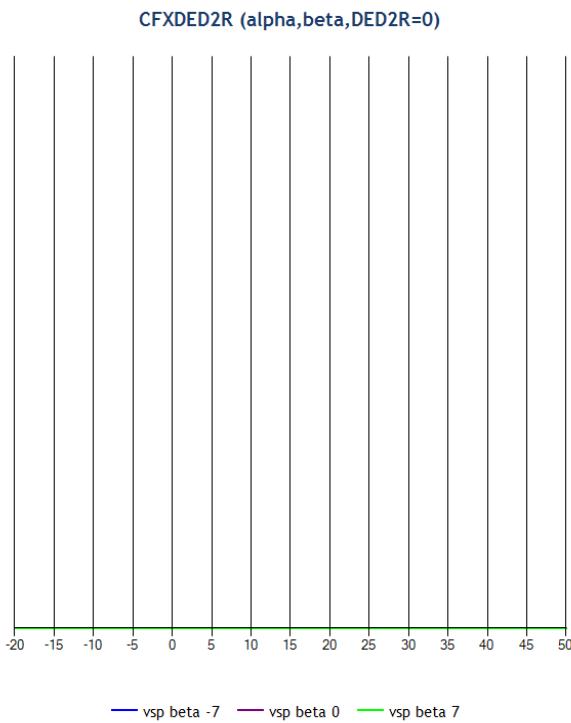
### DRAG DUE TO ELEVON 2R



### DRAG DUE TO ELEVON 2R



### DRAG DUE TO ELEVON 2R



### DRAG DUE TO ELEVON 2R



### DRAG DUE TO ELEVON 2R



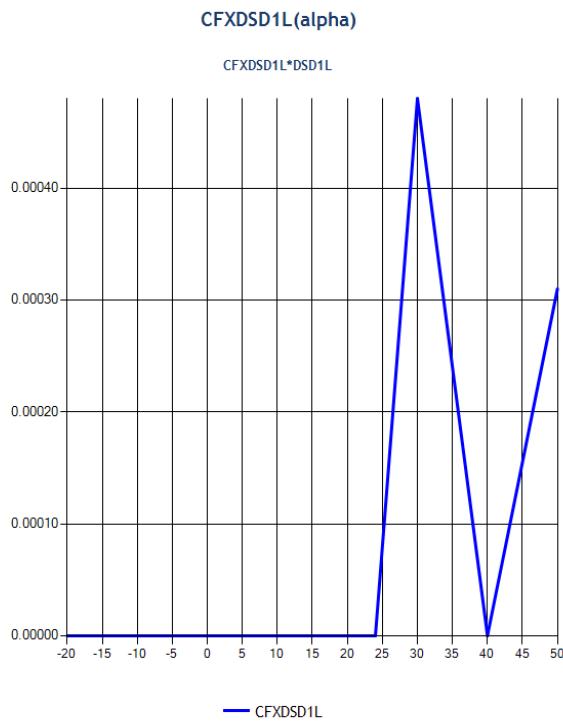
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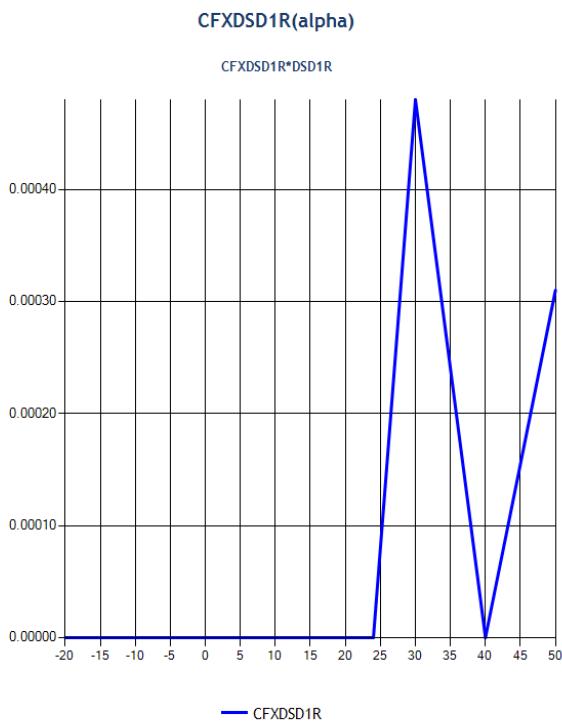
### DRAG DUE TO ELEVON 2R



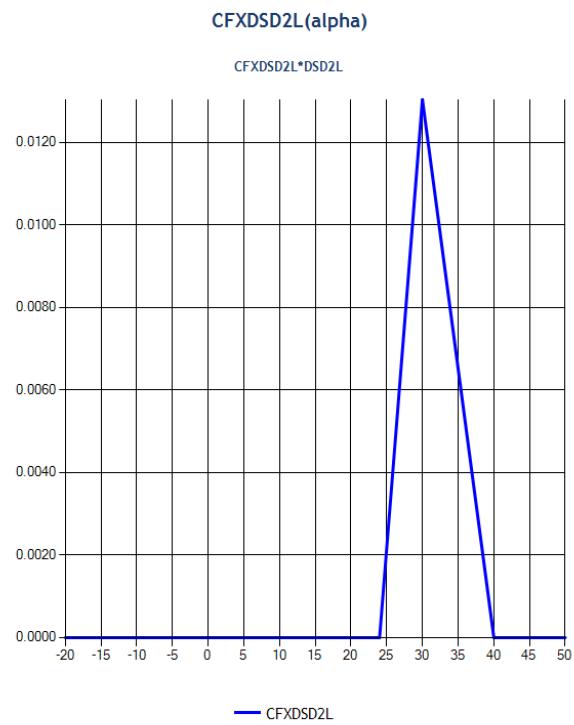
### DRAG DUE TO LE SLAT 1L



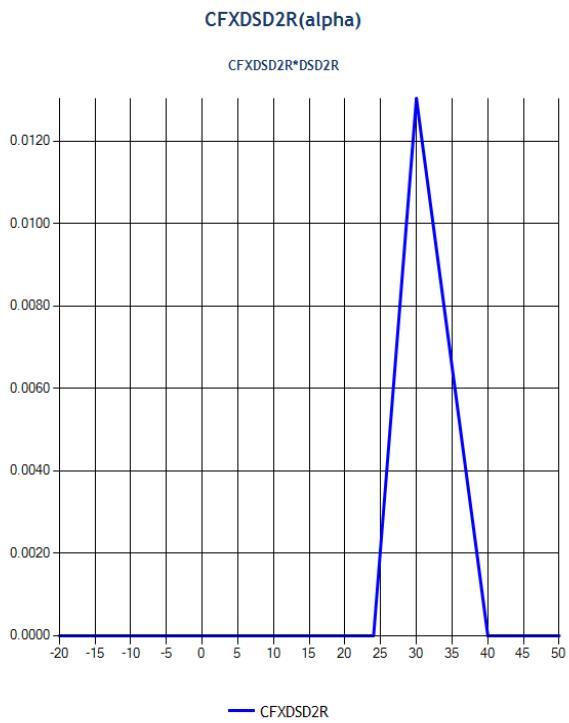
DRAG DUE TO LE SLAT 1R



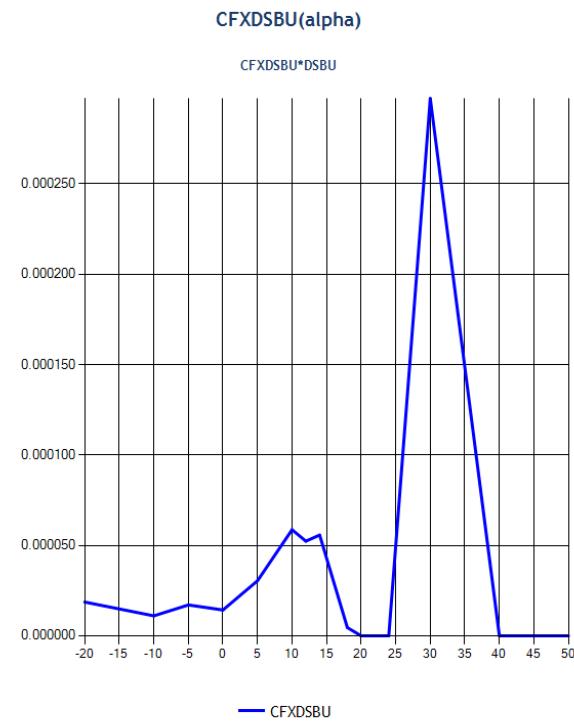
DRAG DUE TO LE SLAT 2L



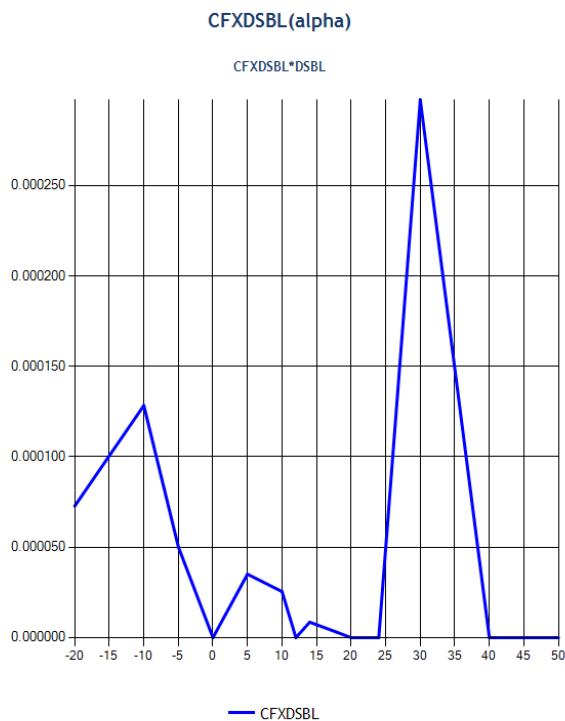
DRAG DUE TO LE SLAT 2R



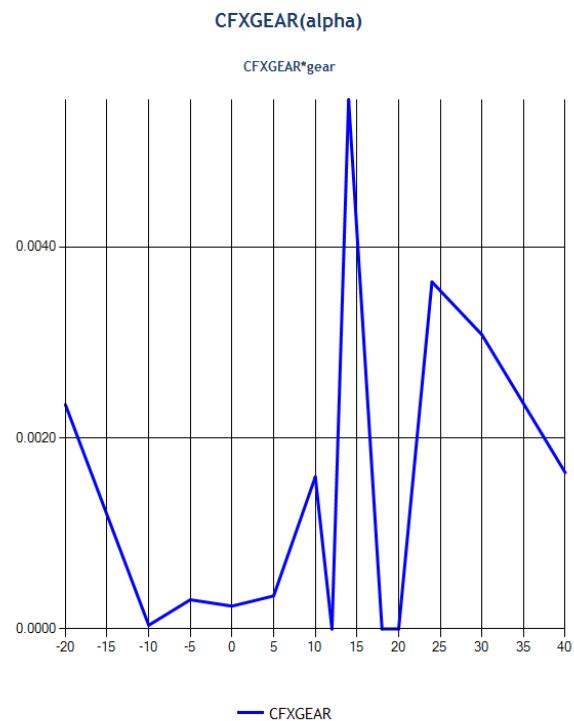
DRAG DUE TO UPPER SPEEDBRAKE DEFLECTION



### DRAG DUE TO LOWER SPEEDBRAKE DEFLECTION



### DRAG INCREMENT DUE TO GEAR



## SIDE

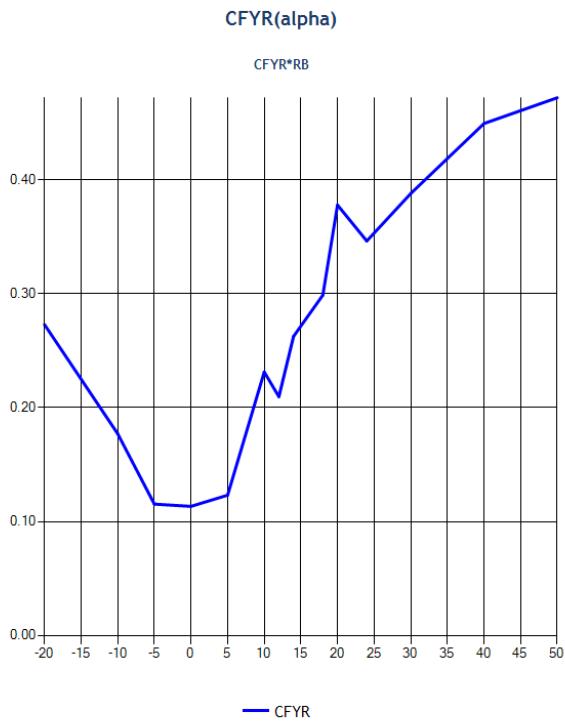
### BASIC SIDE FORCE



### SIDE FORCE DUE TO ROLL RATE



### SIDE FORCE DUE TO YAW RATE



### SIDE FORCE DUE TO ELEVON 1L DEFLECTION



### SIDE FORCE DUE TO ELEVON 1L DEFLECTION

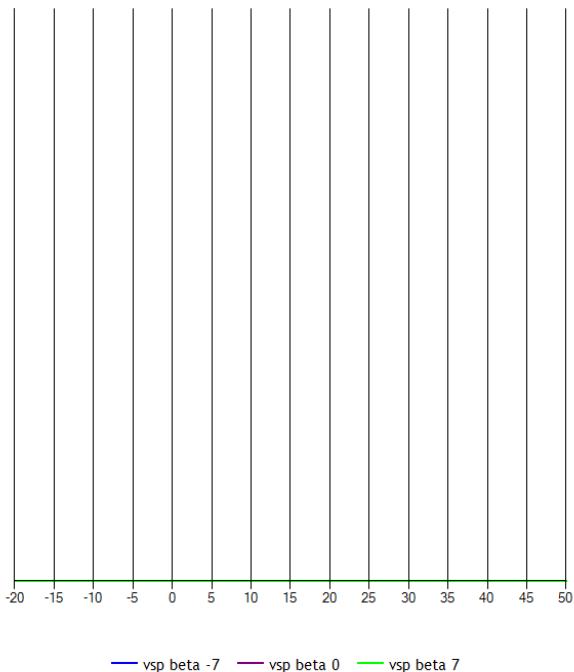


### SIDE FORCE DUE TO ELEVON 1L DEFLECTION



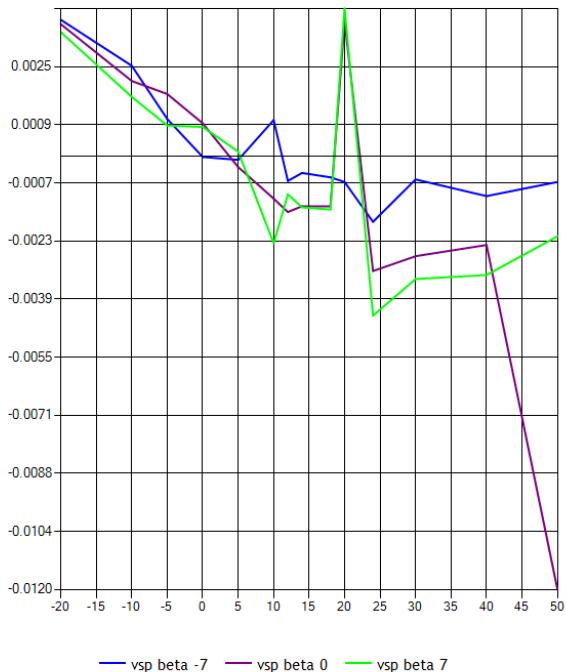
### SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=0)



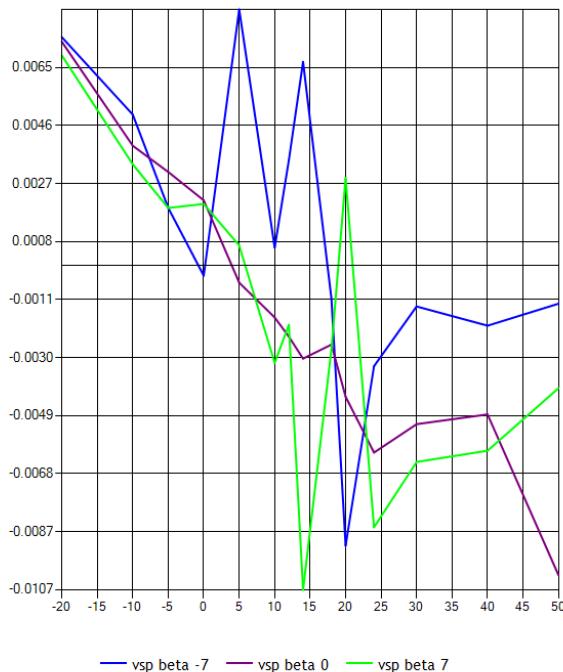
### SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=5)



### SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=10)



### SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=20)



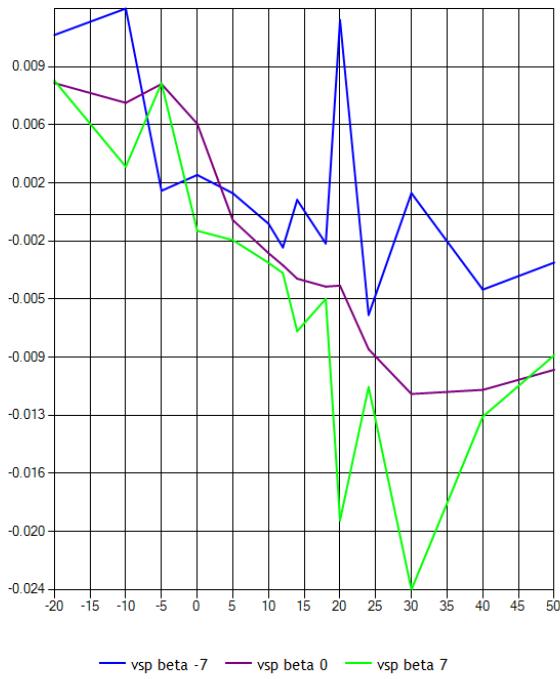
### SIDE FORCE DUE TO ELEVON 1L DEFLECTION

CFYDED1L (alpha,beta,DED1L=25)



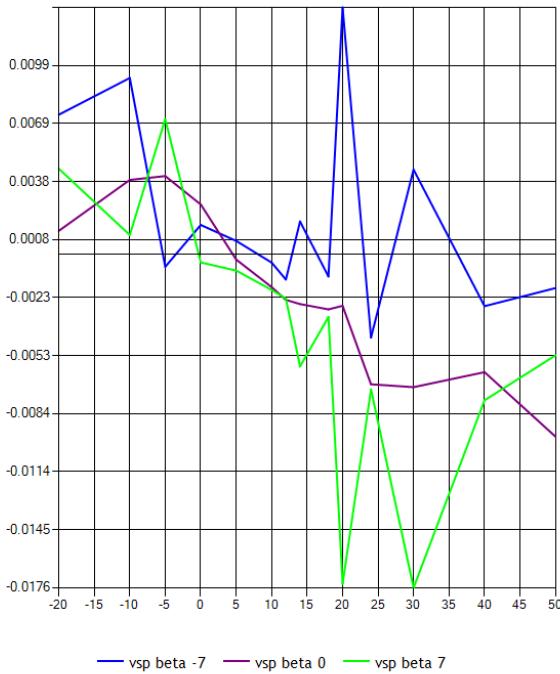
### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=-16)



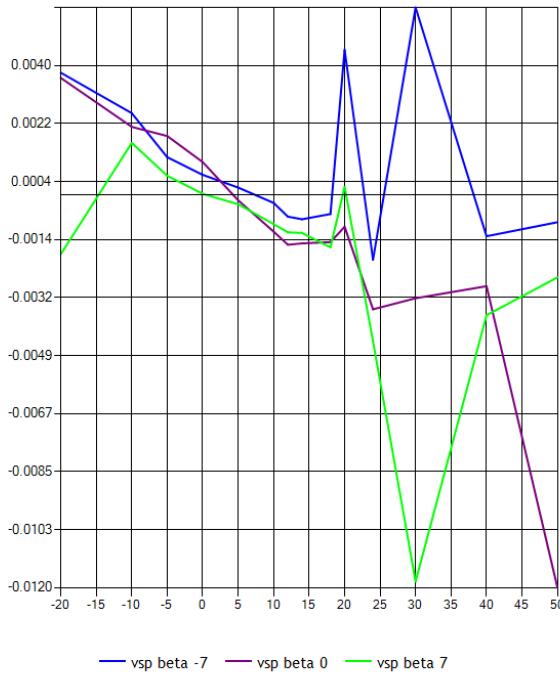
### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=-10)



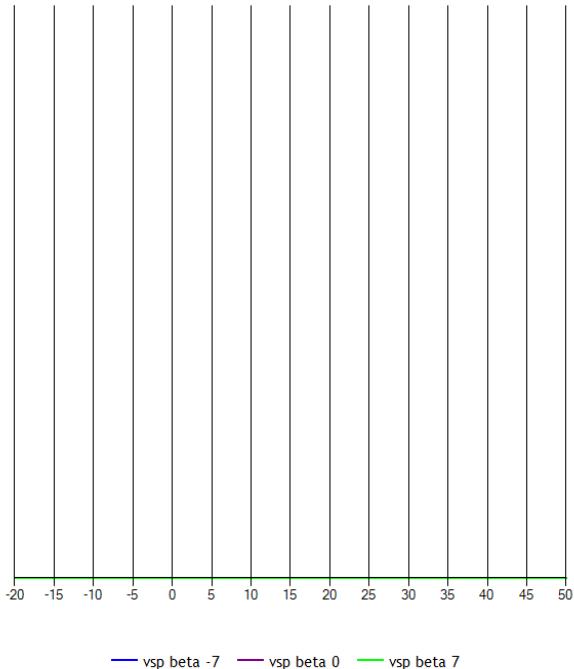
### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=-5)



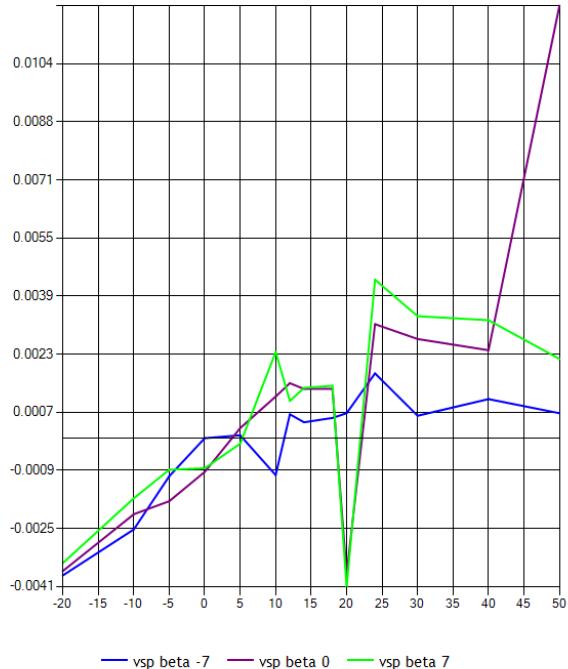
### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=0)



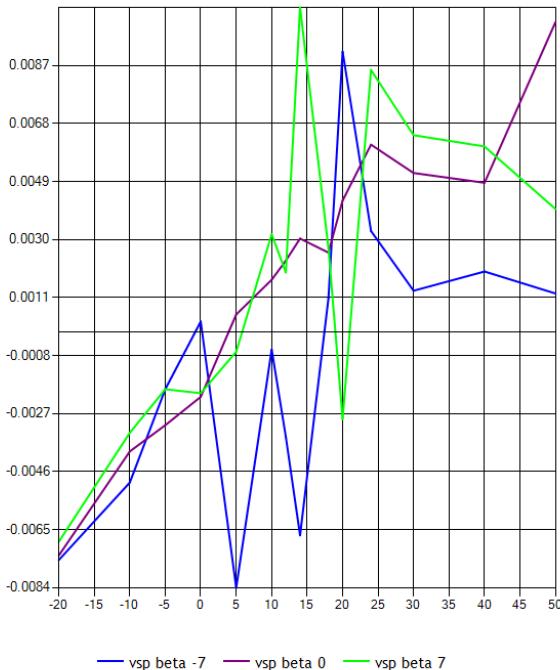
### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=5)



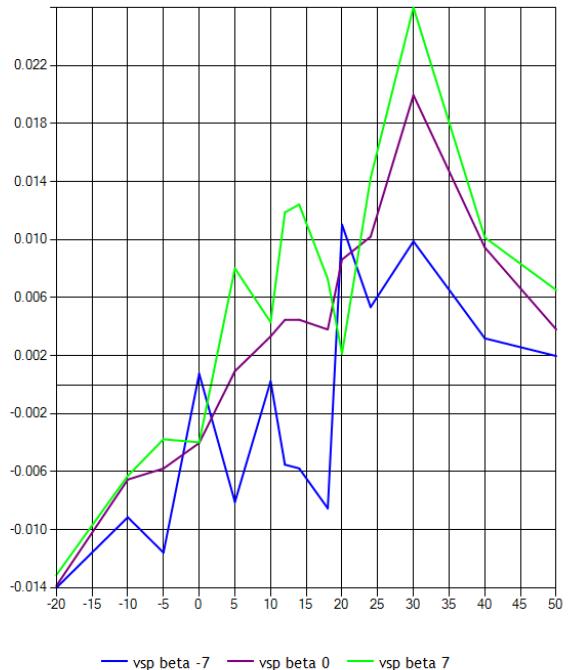
### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=10)



### SIDE FORCE DUE TO ELEVON 1R DEFLECTION

CFYDED1R (alpha,beta,DED1R=20)



### SIDE FORCE DUE TO ELEVON 1R DEFLECTION



### SIDE FORCE DUE TO ELEVON 2L DEFLECTION



### SIDE FORCE DUE TO ELEVON 2L DEFLECTION

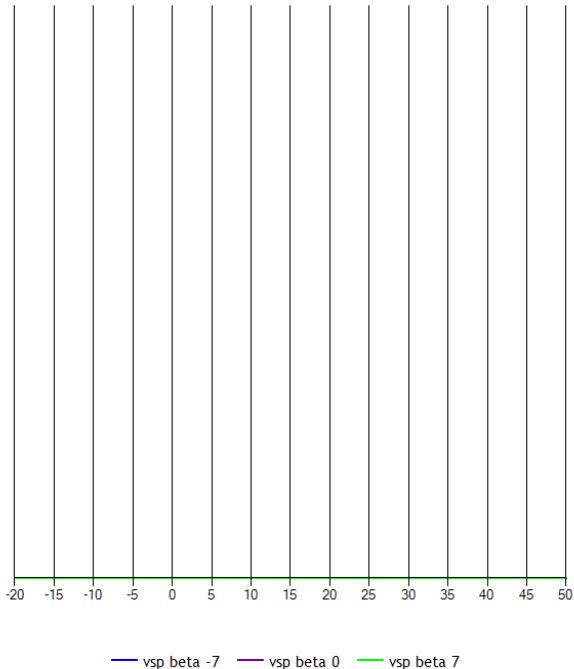


### SIDE FORCE DUE TO ELEVON 2L DEFLECTION



### SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=0)



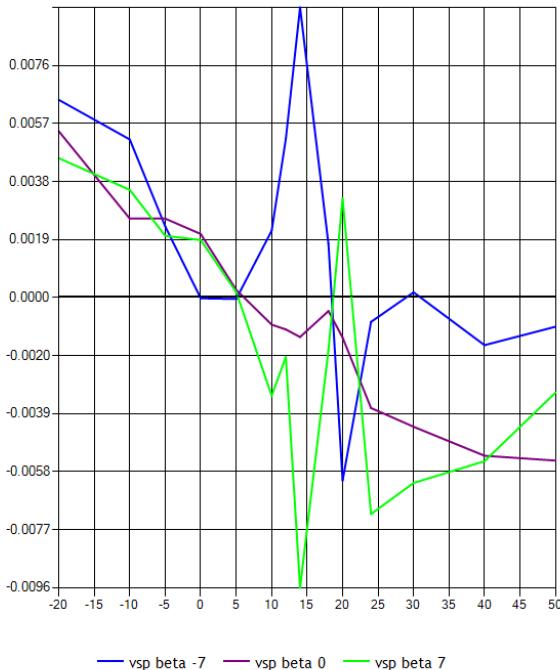
### SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=5)



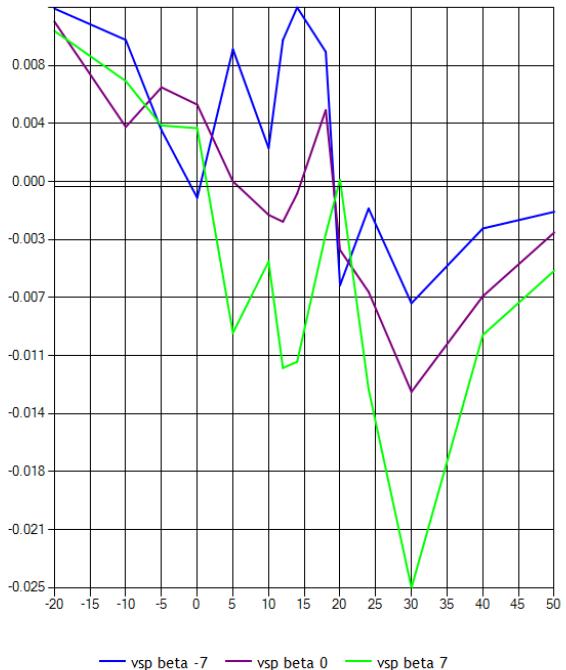
### SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=10)



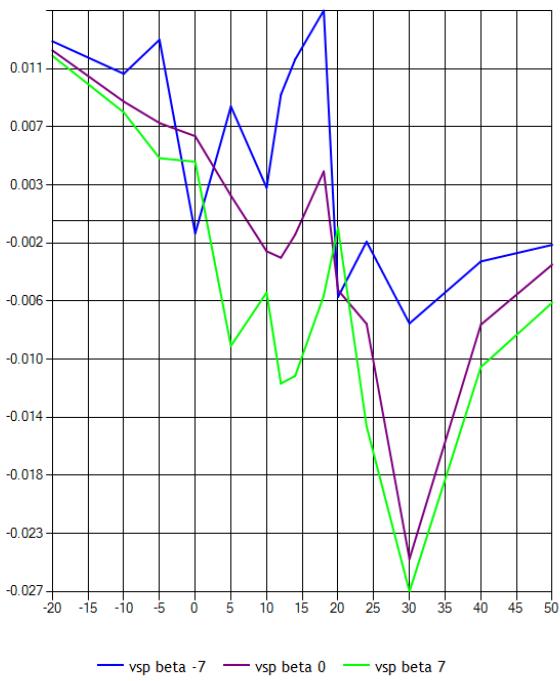
### SIDE FORCE DUE TO ELEVON 2L DEFLECTION

CFYDED2L (alpha,beta,DED2L=20)



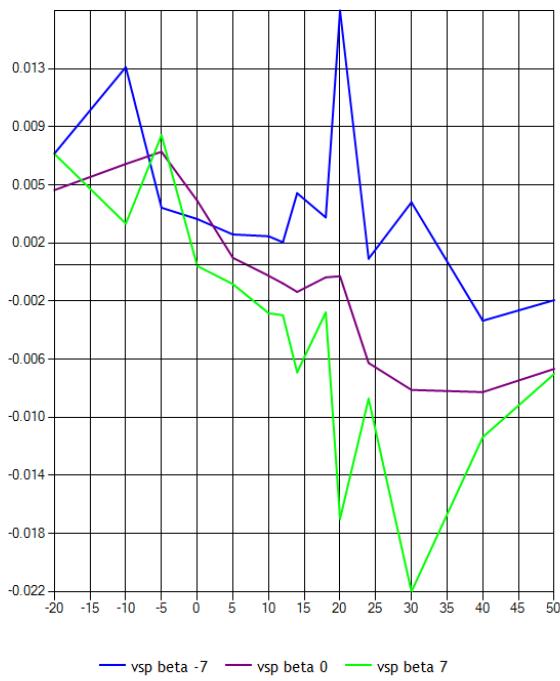
SIDE FORCE DUE TO ELEVON 2L DEFLECTION

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=-10)



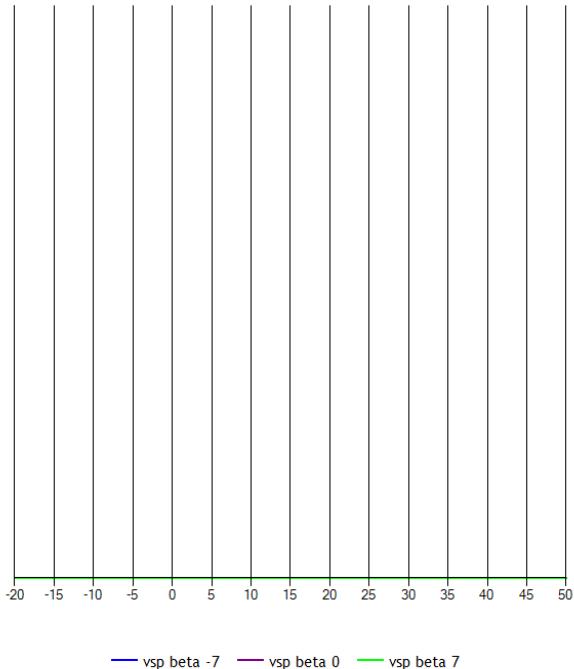
SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=-5)



### SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=0)



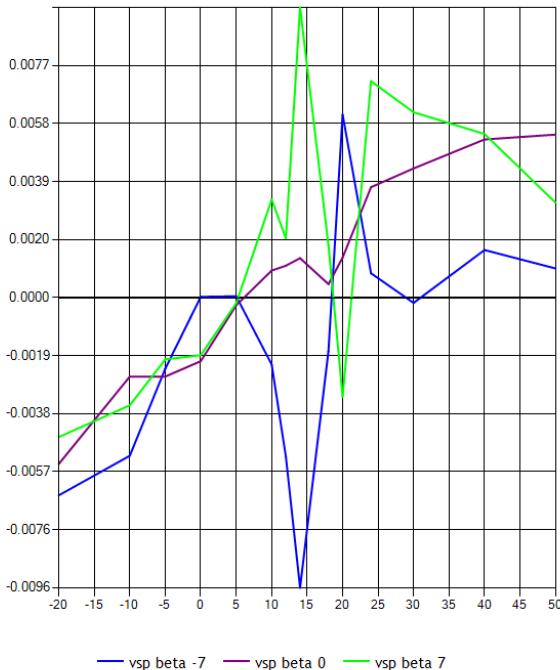
### SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=5)



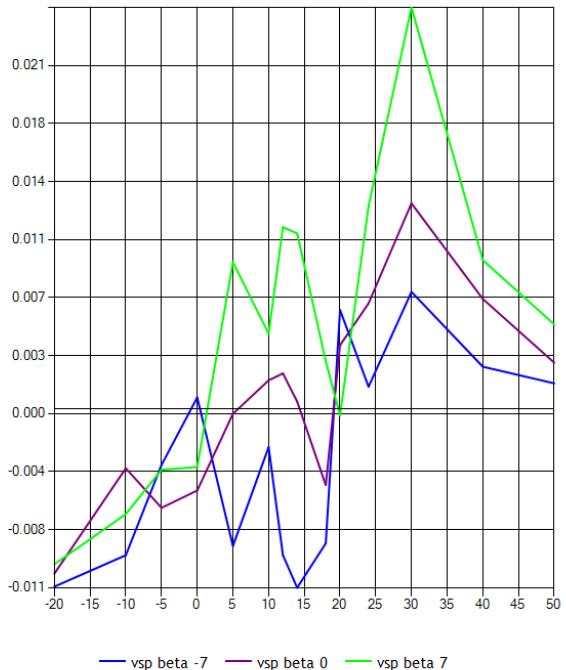
### SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=10)



### SIDE FORCE DUE TO ELEVON 2R DEFLECTION

CFYDED2R (alpha,beta,DED2R=20)



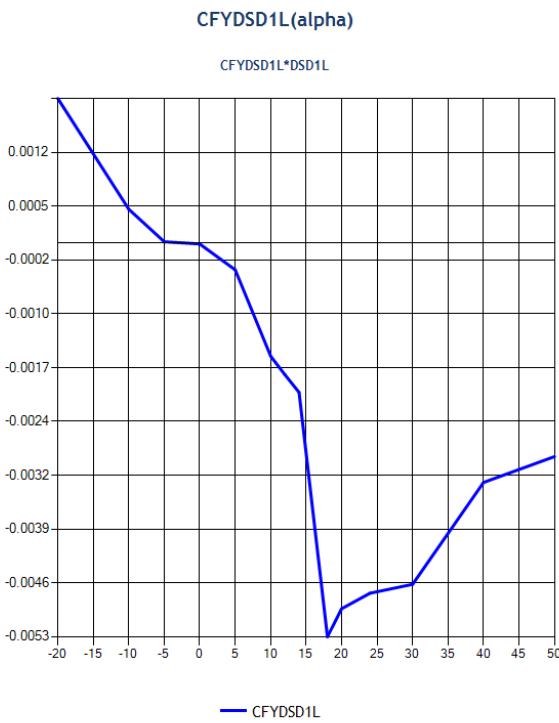
### SIDE FORCE DUE TO ELEVON 2R DEFLECTION



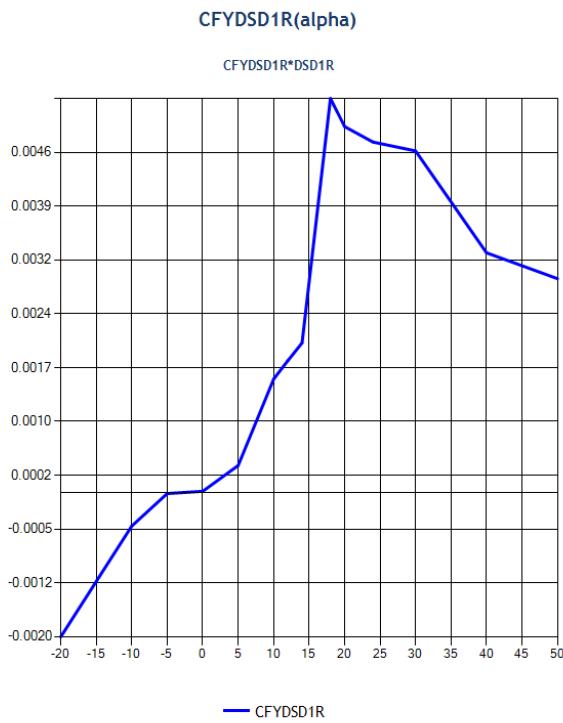
### SIDE FORCE DUE TO RUDDER DEFLECTION



### SIDE FORCE DUE TO LE SLAT 1L DEFLECTION



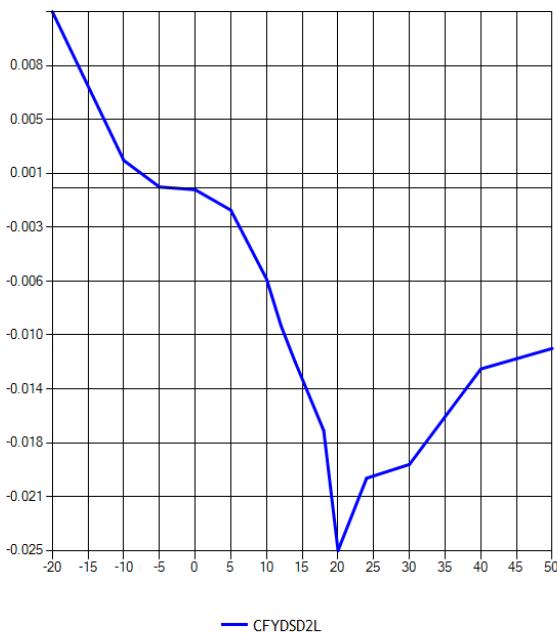
### SIDE FORCE DUE TO LE SLAT 1R DEFLECTION



### SIDE FORCE DUE TO LE SLAT 2L DEFLECTION

CFYDSD2L(alpha)

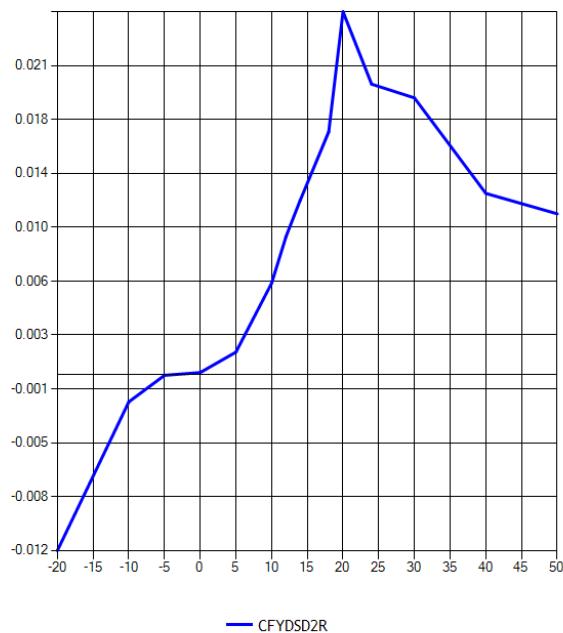
CFYDSD2L\*DSD2L



### SIDE FORCE DUE TO LE SLAT 2R DEFLECTION

CFYDSD2R(alpha)

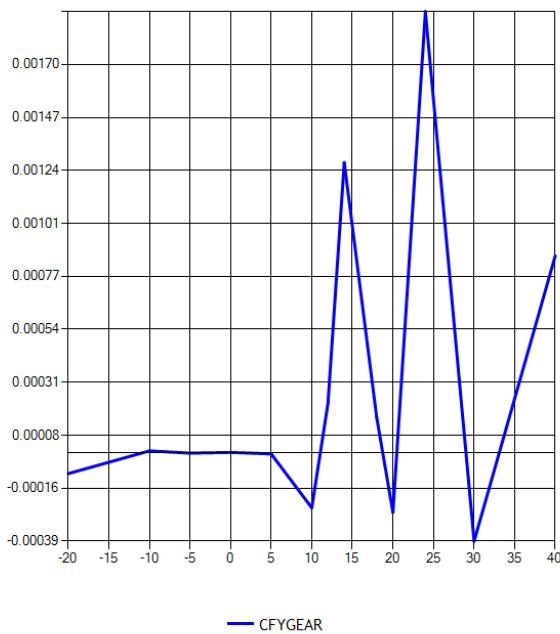
CFYDSD2R\*DSD2R



### SIDE FORCE INCREMENT DUE TO GEAR

CFYGEAR(alpha)

CFYGEAR\*gear

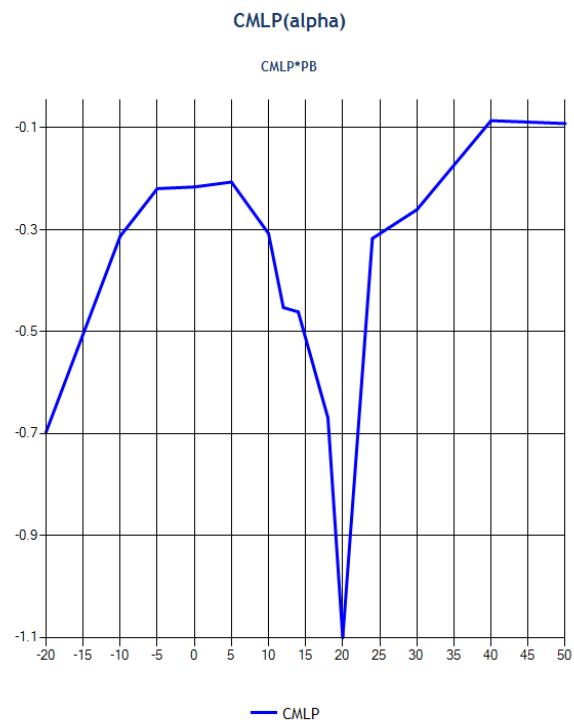


ROLL

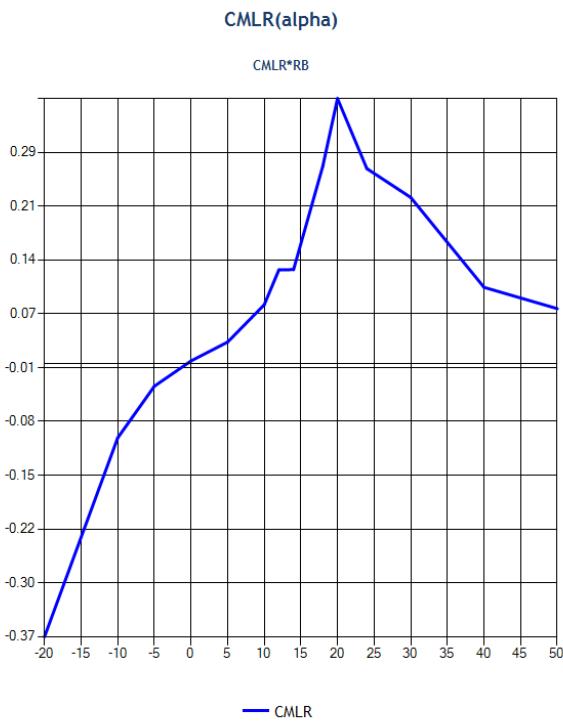
### BASIC ROLLING MOMENT



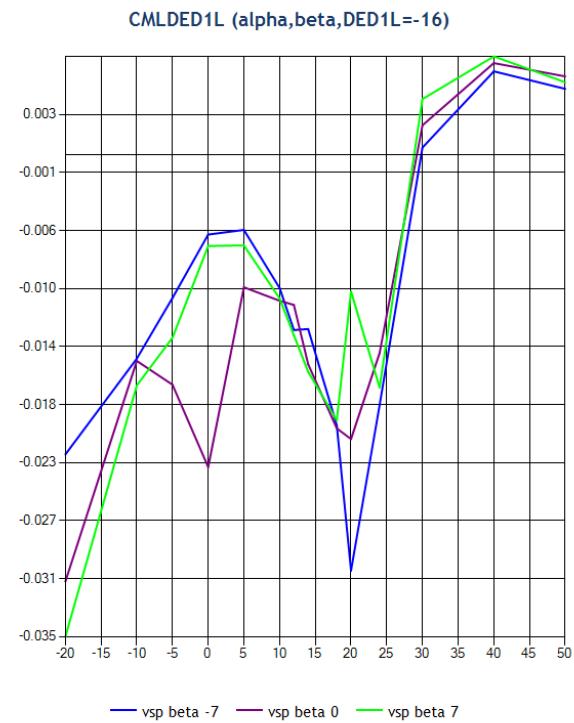
### ROLL DAMPING DERIVATIVE



### ROLLING MOMENT DUE TO YAW RATE



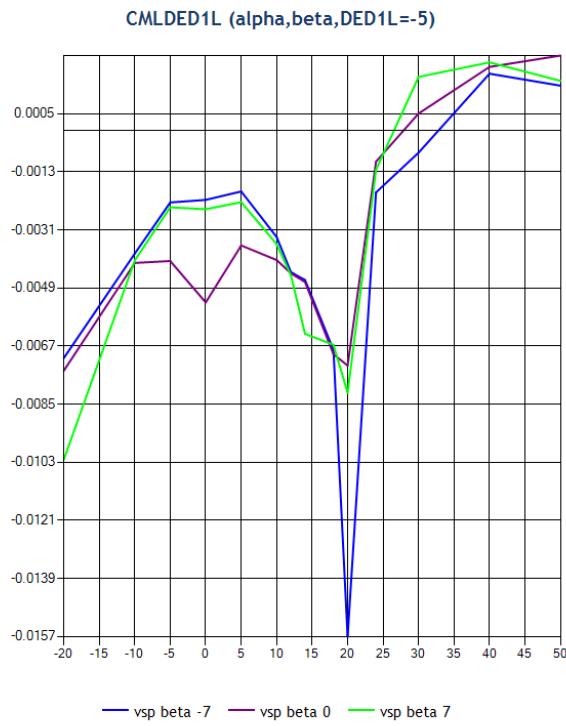
### ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION



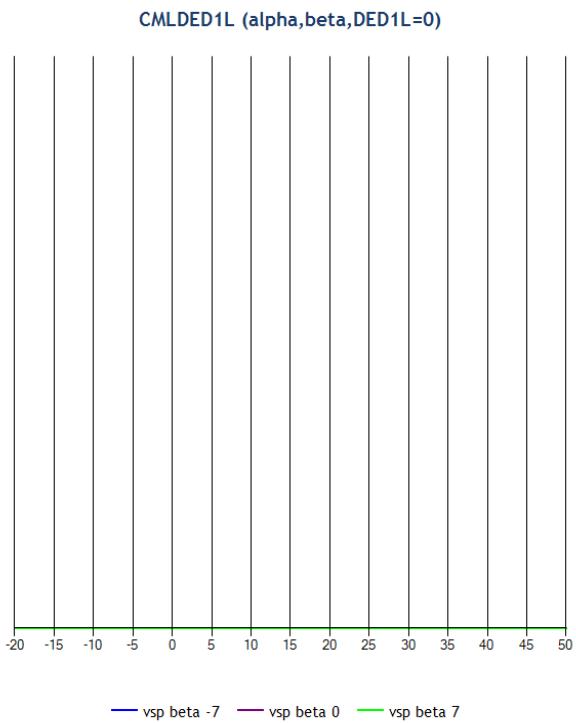
### ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION



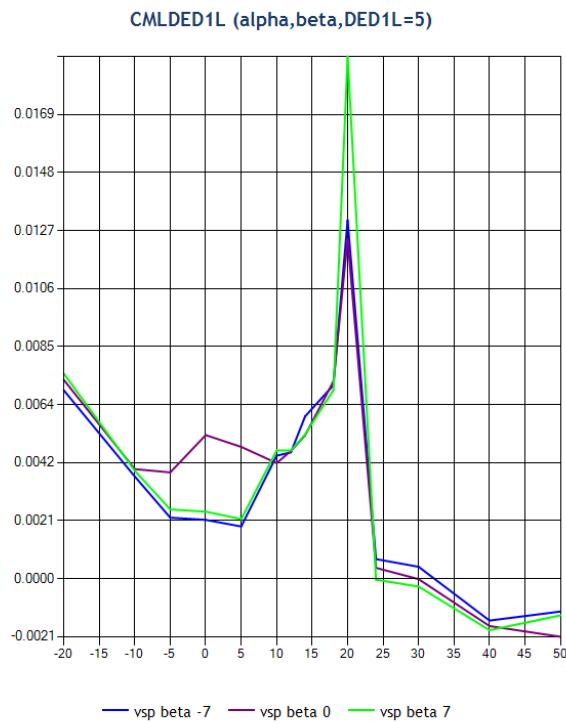
### ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION



### ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

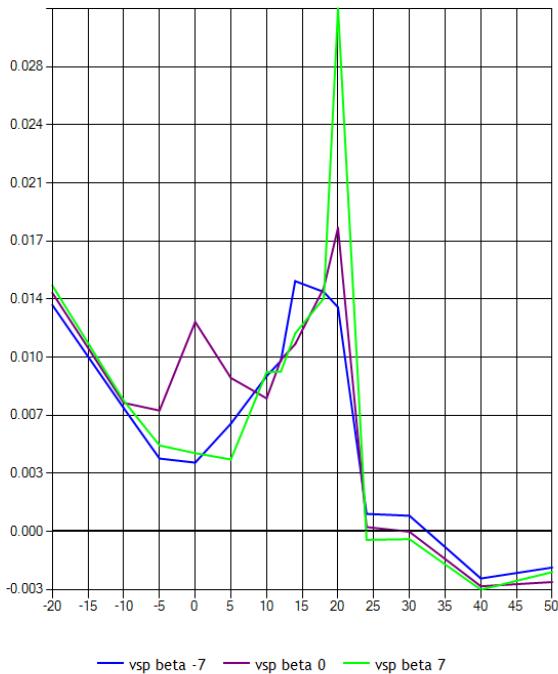


### ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION



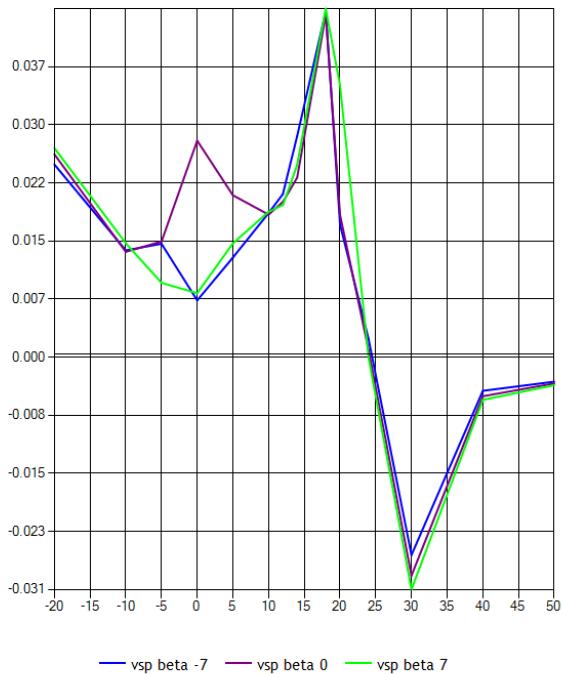
ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

CMLDED1L (alpha,beta,DED1L=10)



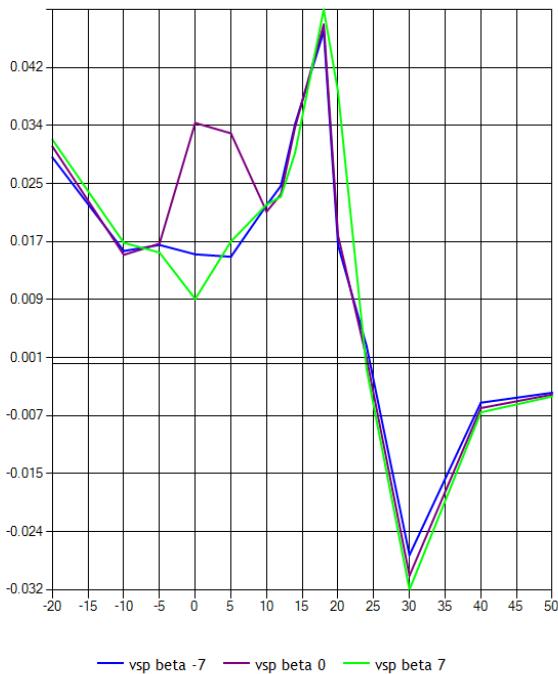
ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

CMLDED1L (alpha,beta,DED1L=20)



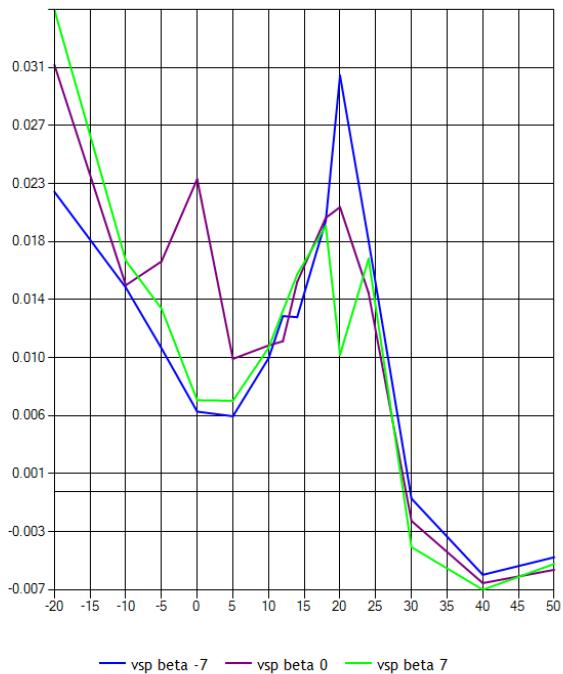
ROLLING MOMENT DUE TO ELEVON 1L DEFLECTION

CMLDED1L (alpha,beta,DED1L=25)



ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION

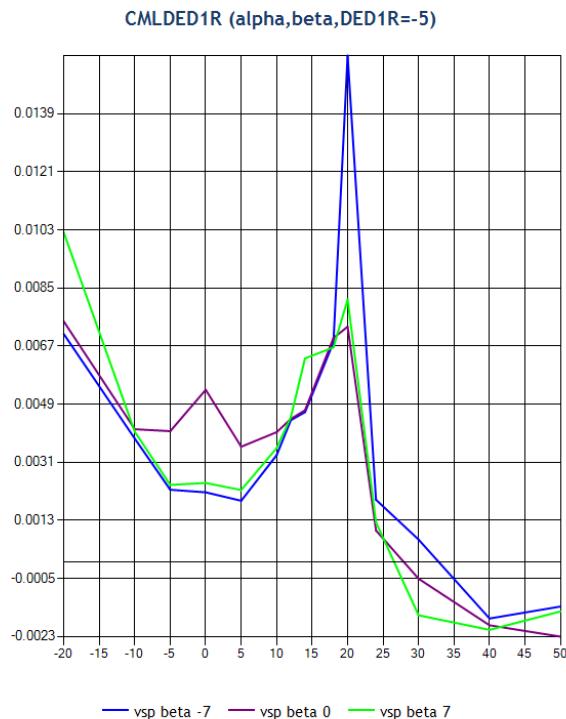
CMLDED1R (alpha,beta,DED1R=-16)



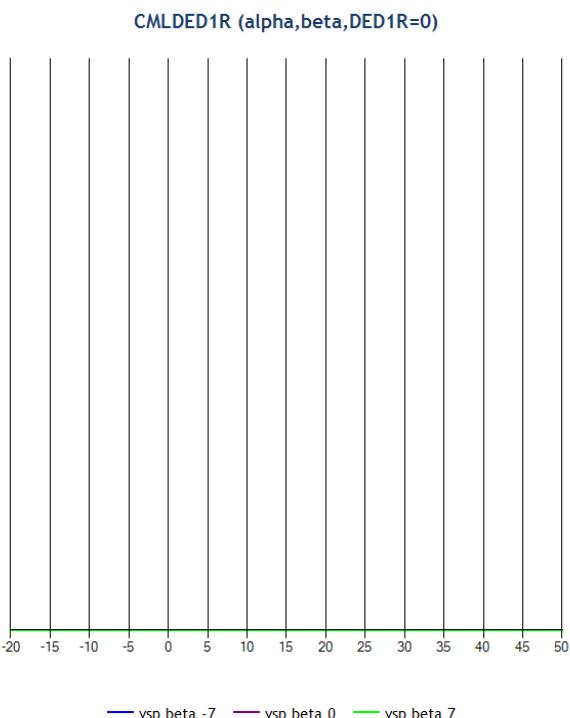
ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION



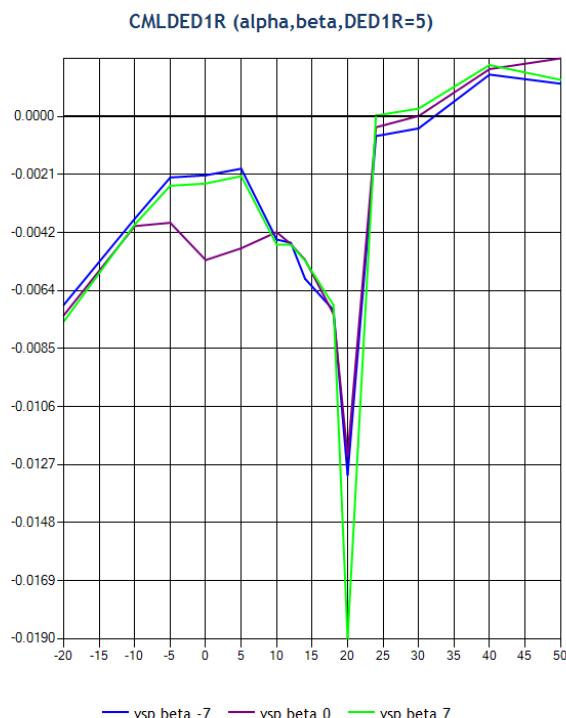
ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION



ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION



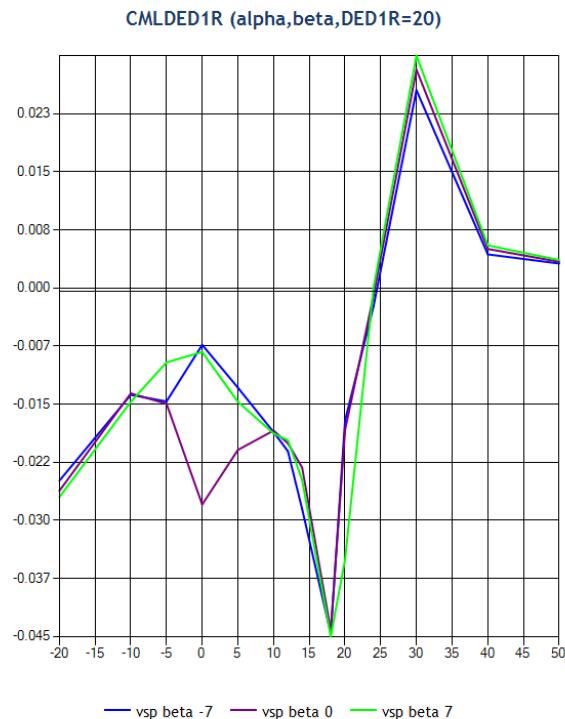
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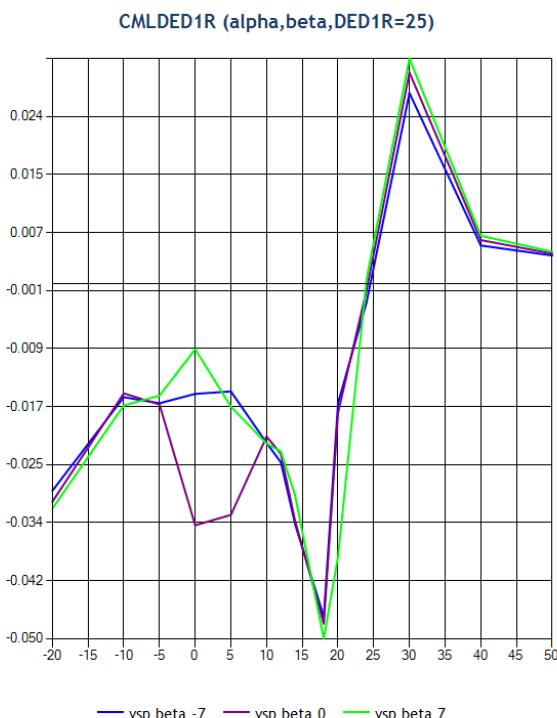
ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION



ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION



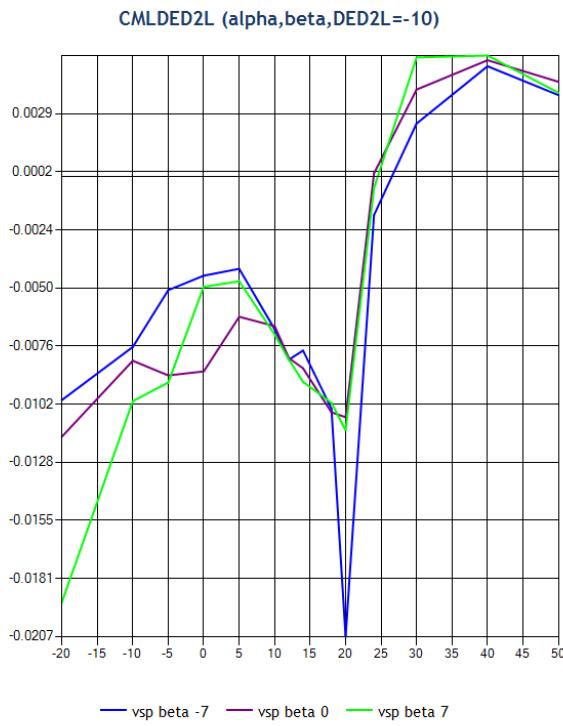
ROLLING MOMENT DUE TO ELEVON 1R DEFLECTION



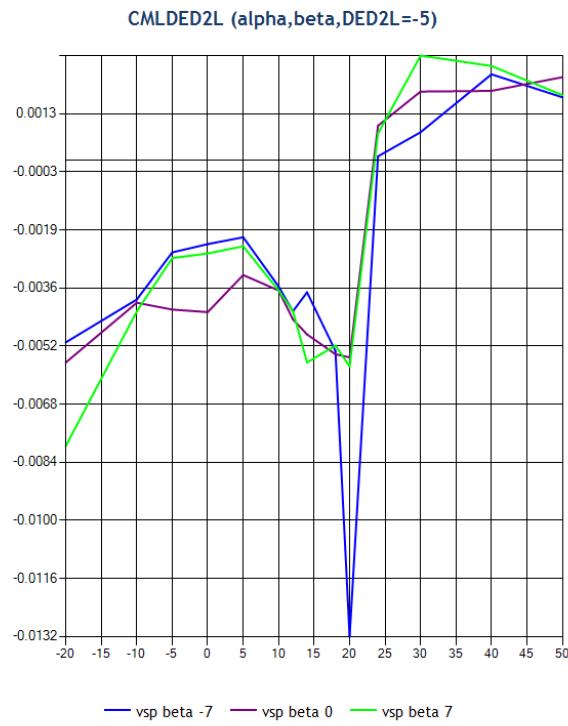
ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION



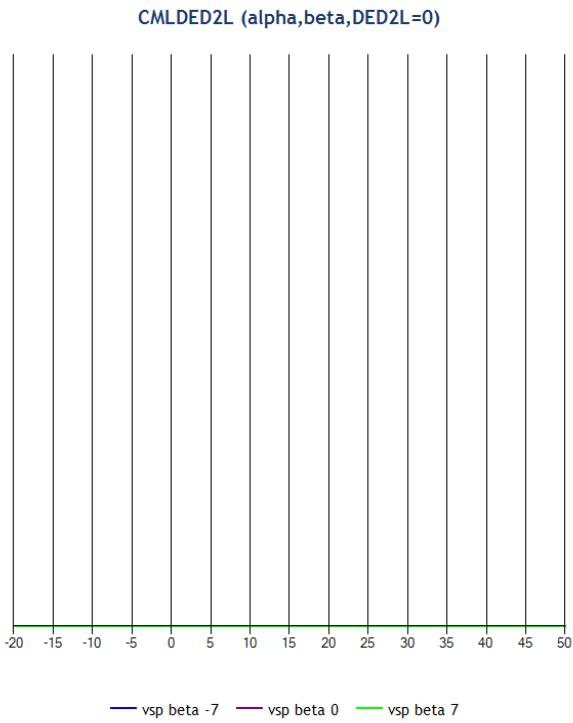
### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION



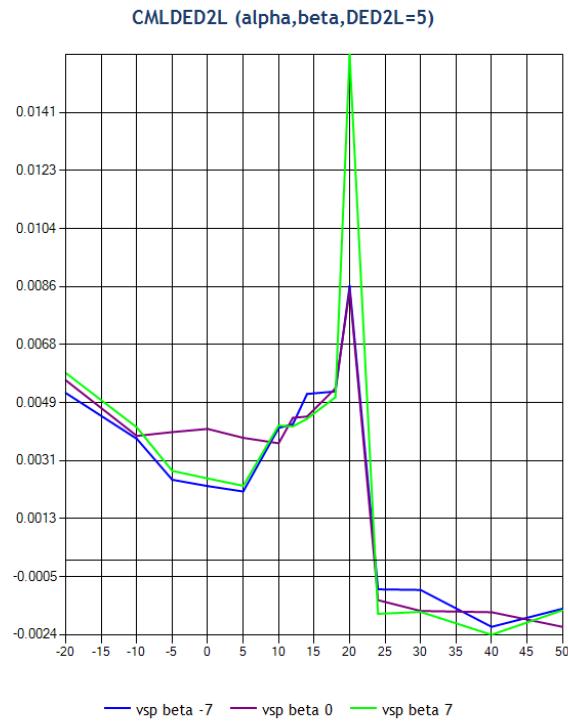
### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION



### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

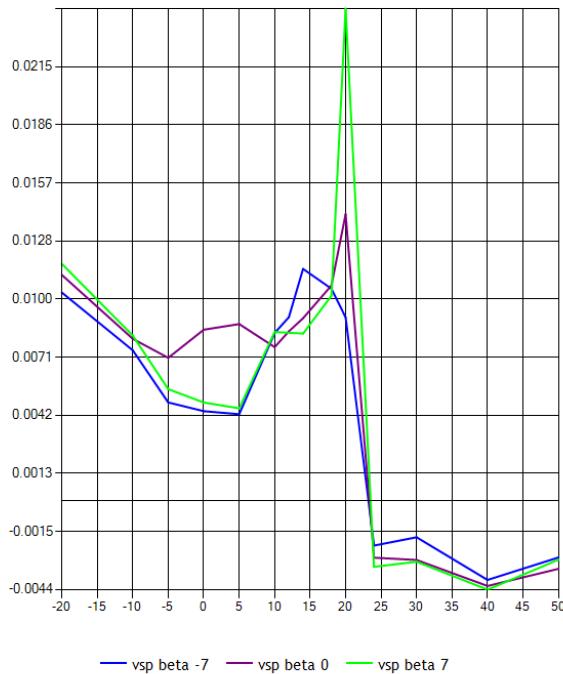


### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION



### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

CMLDED2L (alpha,beta,DED2L=10)



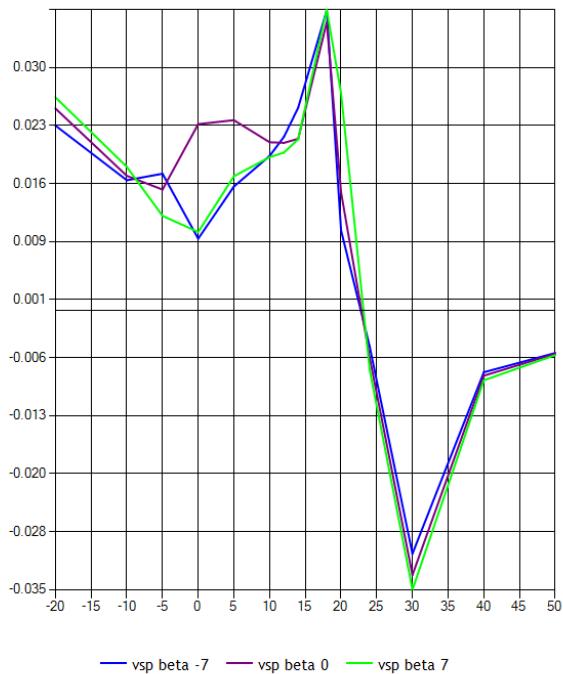
### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

CMLDED2L (alpha,beta,DED2L=20)



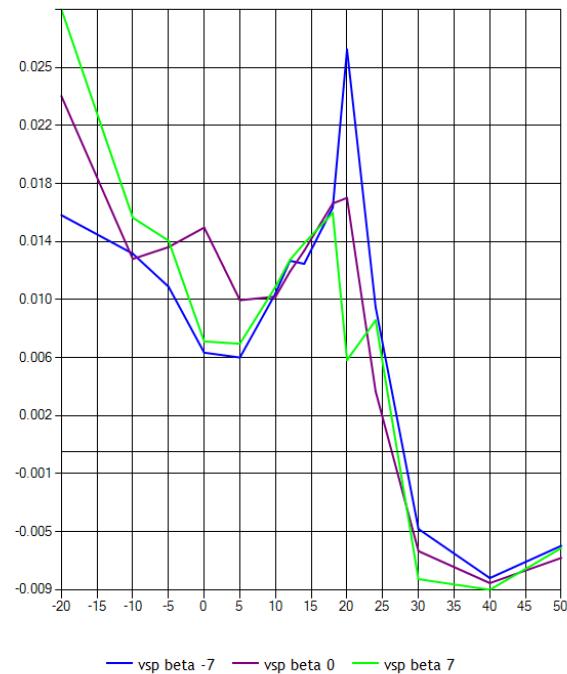
### ROLLING MOMENT DUE TO ELEVON 2L DEFLECTION

CMLDED2L (alpha,beta,DED2L=25)



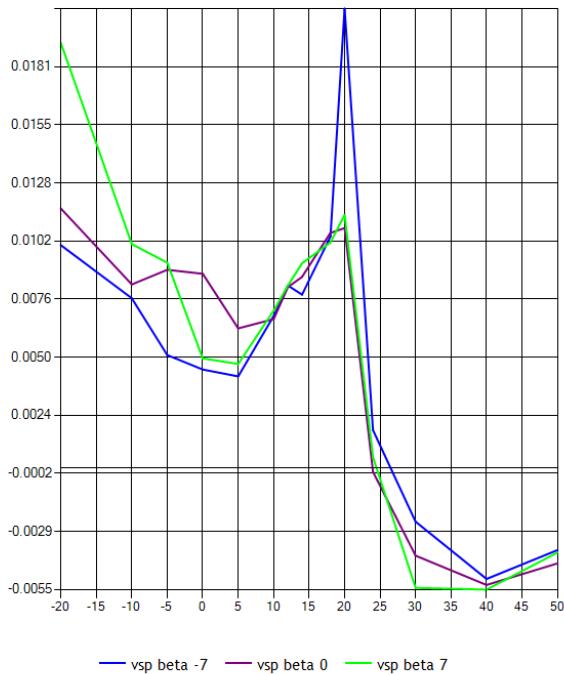
### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=-16)



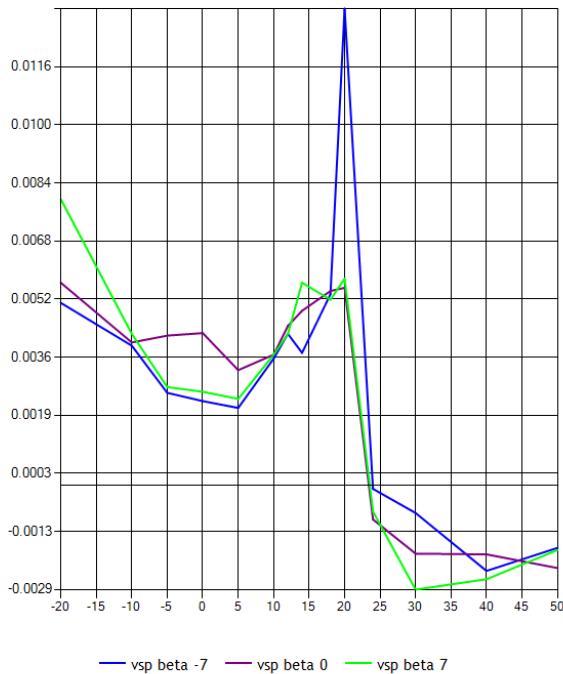
### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=-10)



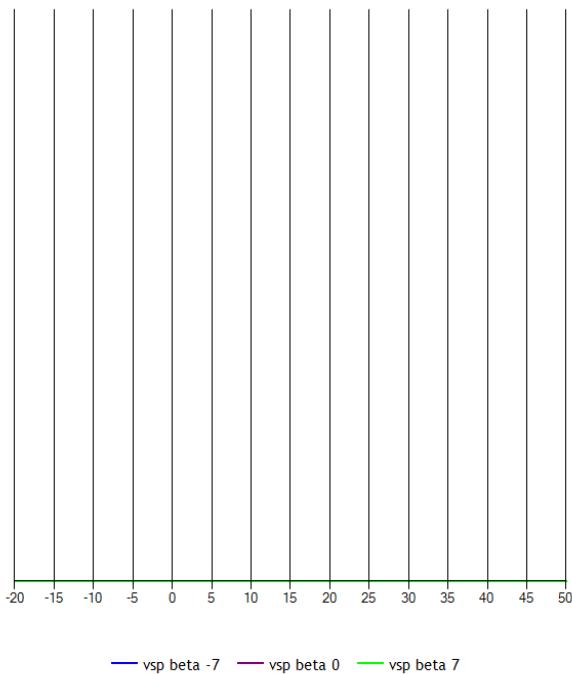
### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=-5)



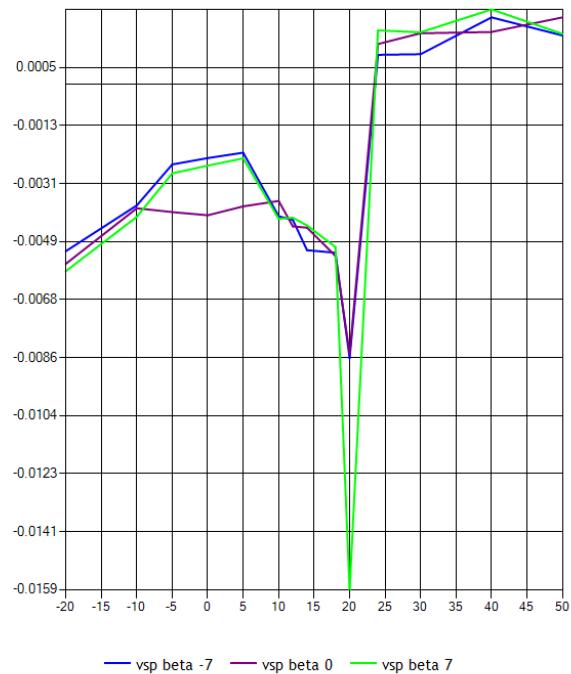
### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=0)



### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION

CMLDED2R (alpha,beta,DED2R=5)



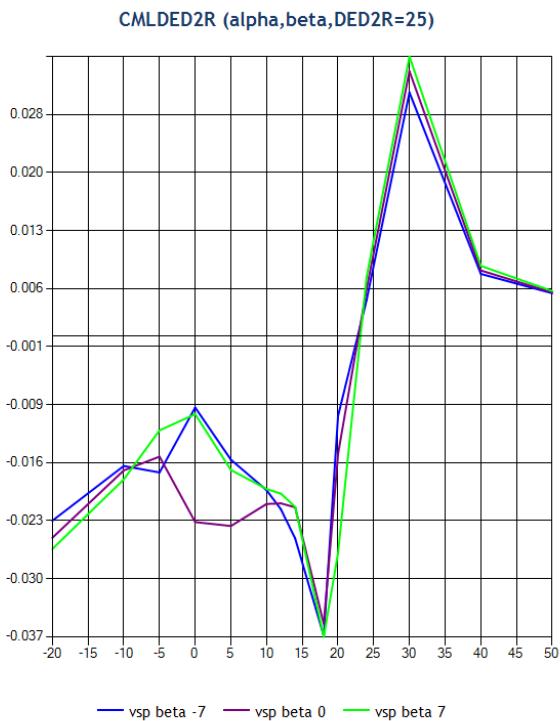
### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION



### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION



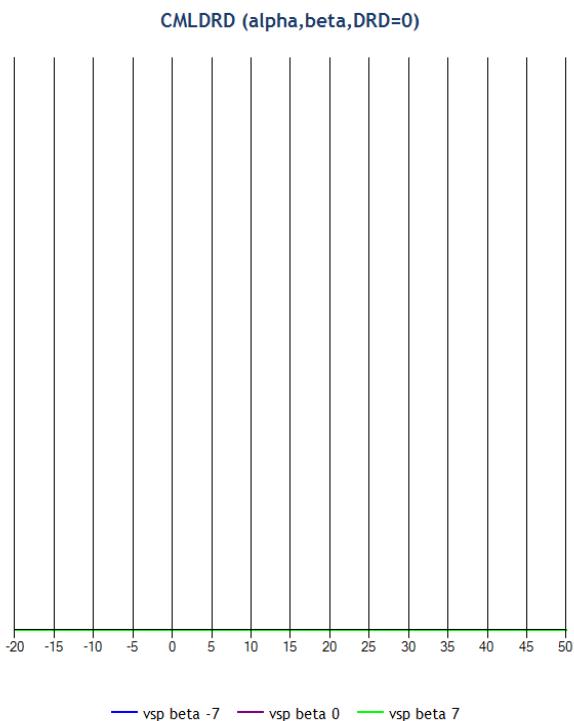
### ROLLING MOMENT DUE TO ELEVON 2R DEFLECTION



### ROLLING MOMENT DUE TO RUDDER DEFLECTION



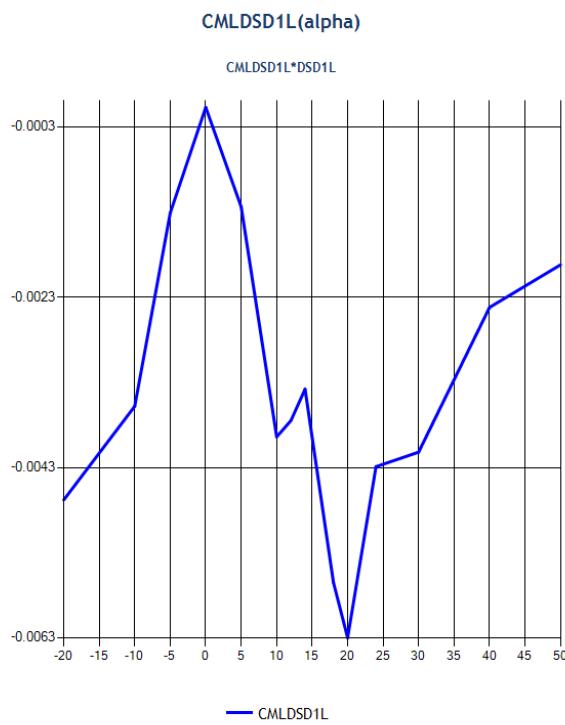
### ROLLING MOMENT DUE TO RUDDER DEFLECTION



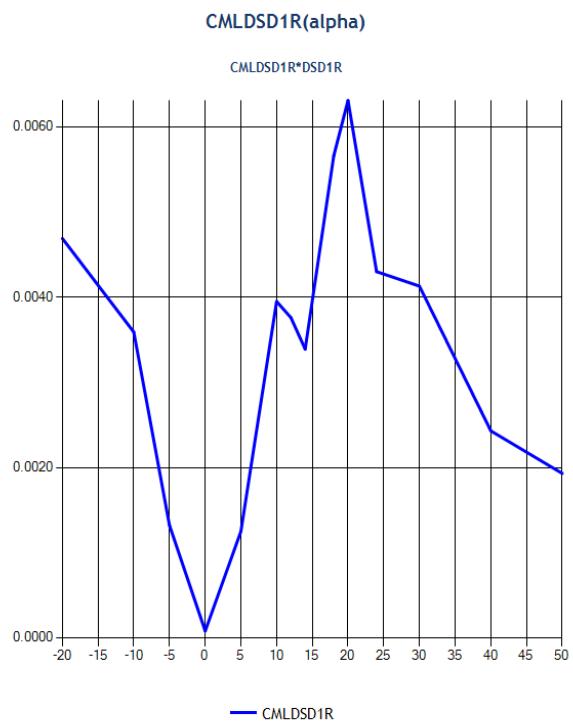
### ROLLING MOMENT DUE TO RUDDER DEFLECTION



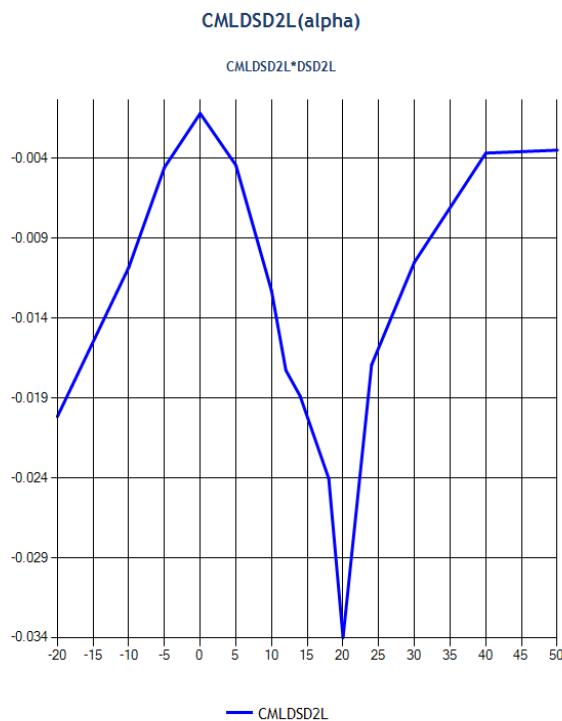
### ROLLING MOMENT DUE TO LE SLAT 1L DEFLECTION



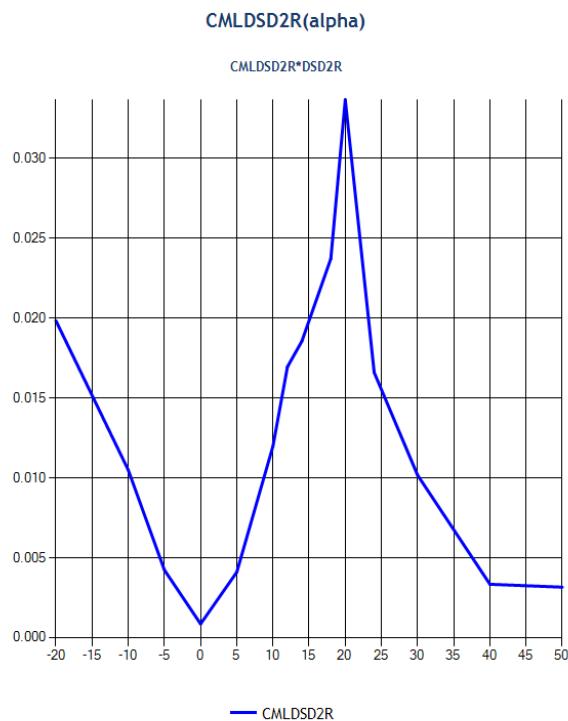
### ROLLING MOMENT DUE TO LE SLAT 1R DEFLECTION



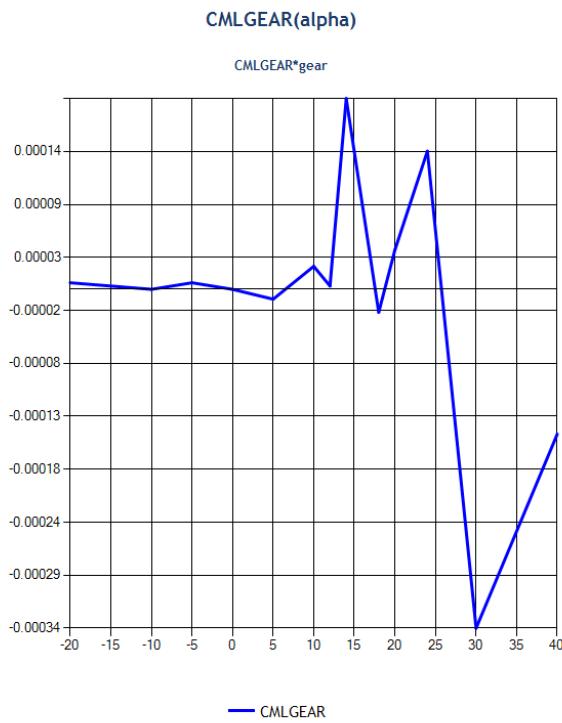
### ROLLING MOMENT DUE TO LE SLAT 2L DEFLECTION



### ROLLING MOMENT DUE TO LE SLAT 2R DEFLECTION



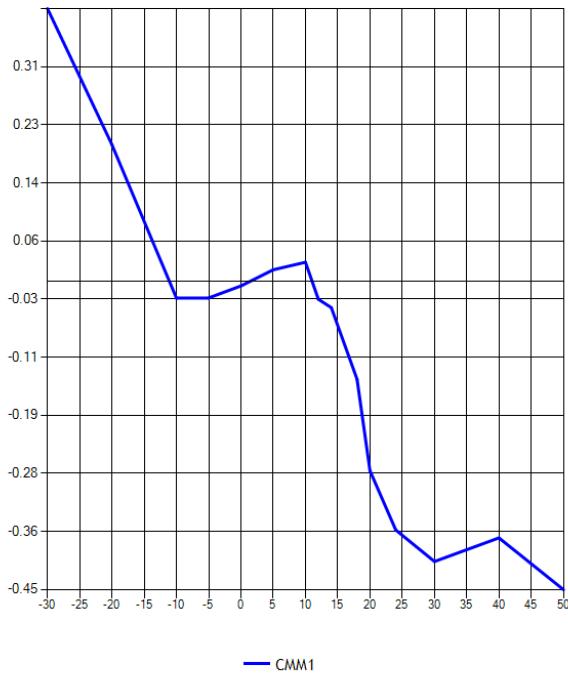
### ROLLING MOMENT INCREMENT DUE TO GEAR



PITCH

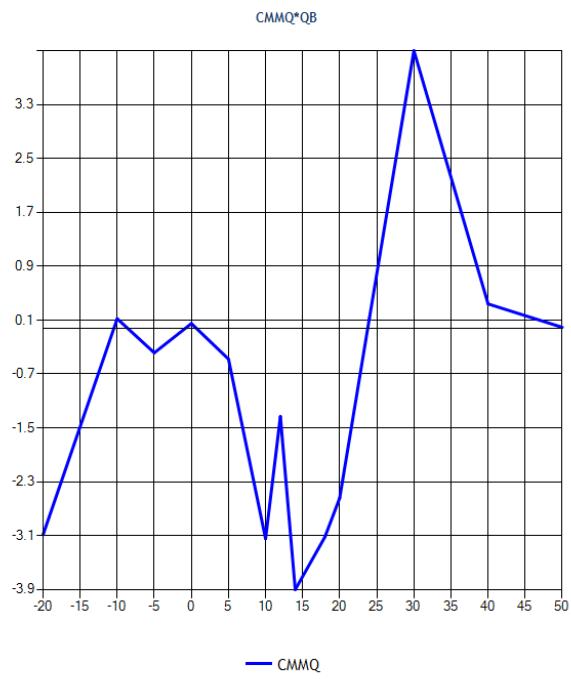
BASIC PITCHING MOMENT

CMM1(alpha)



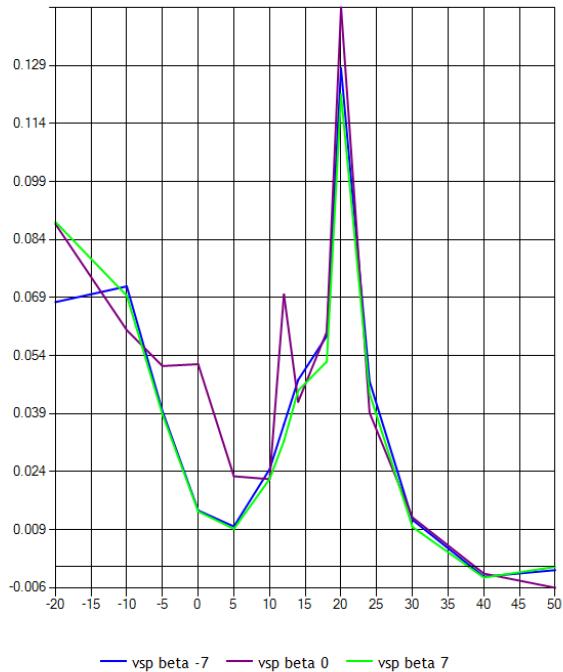
PITCH DAMPING DERIVATIVE

CMMQ(alpha)



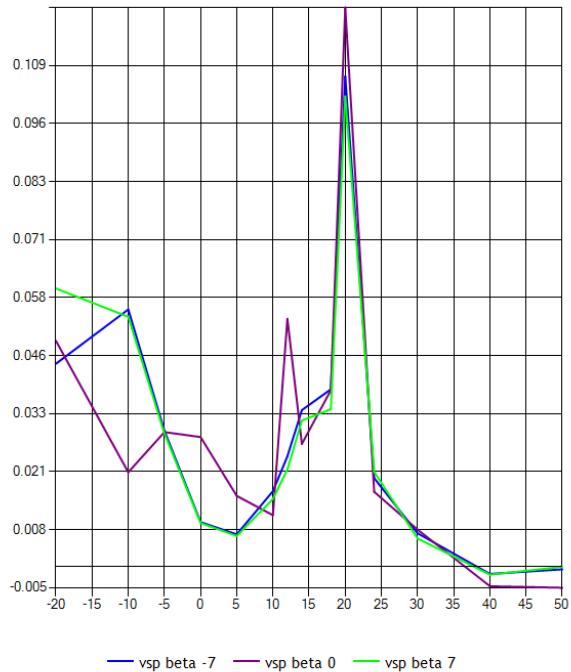
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=-16)



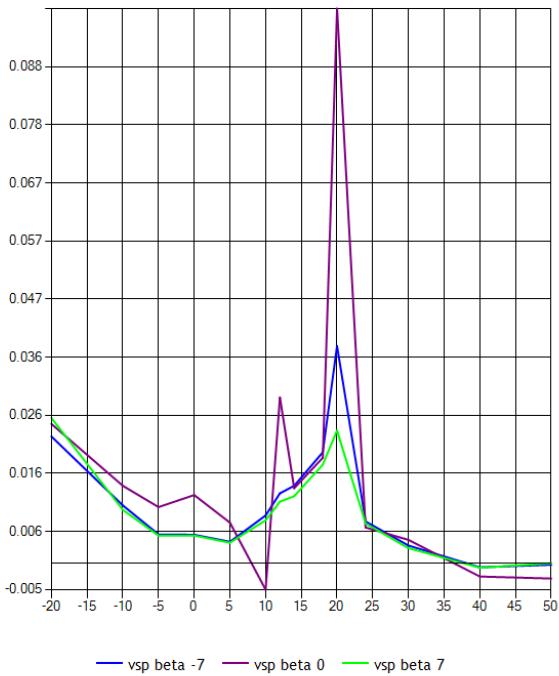
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=-10)



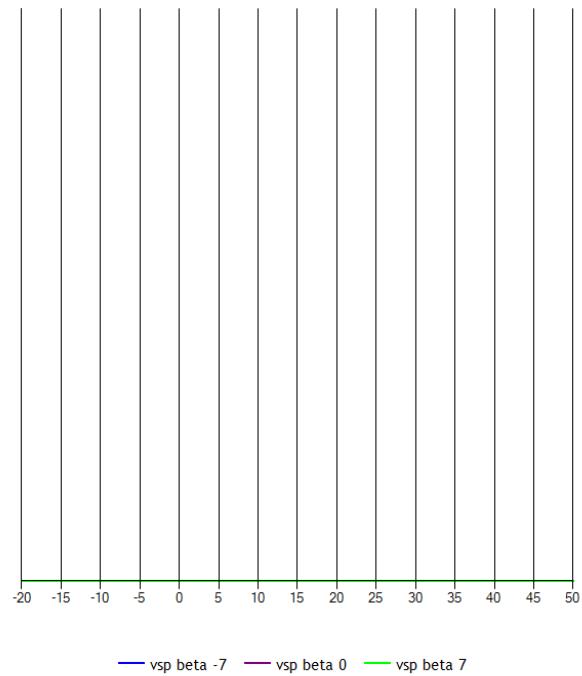
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=-5)



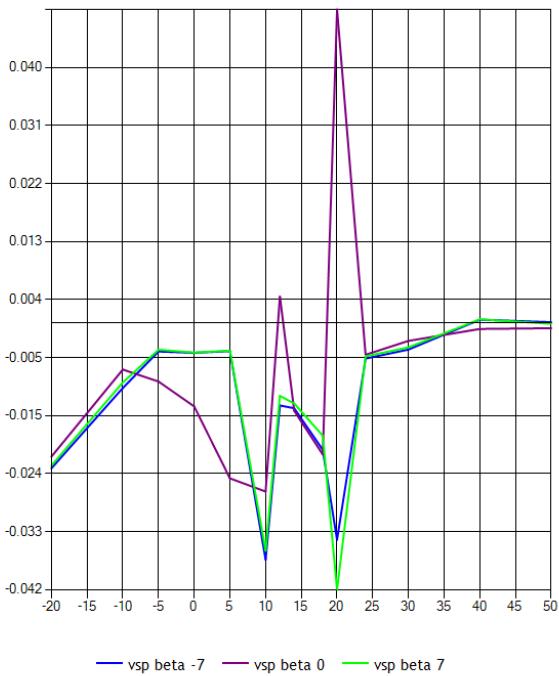
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=0)



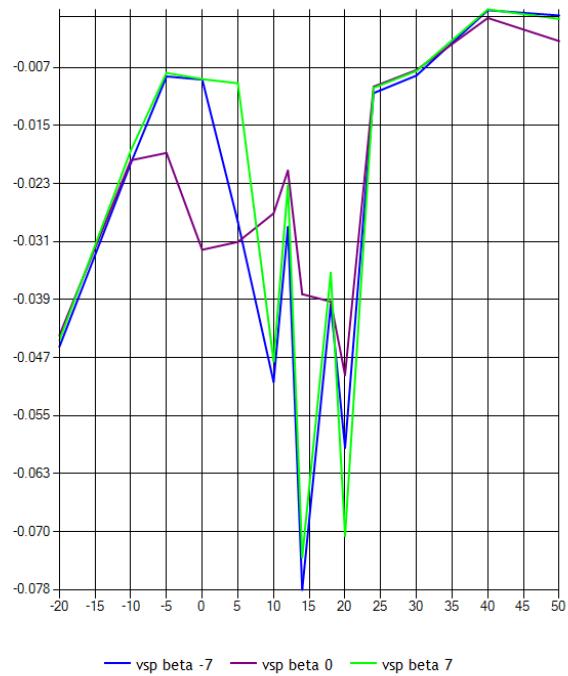
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=5)



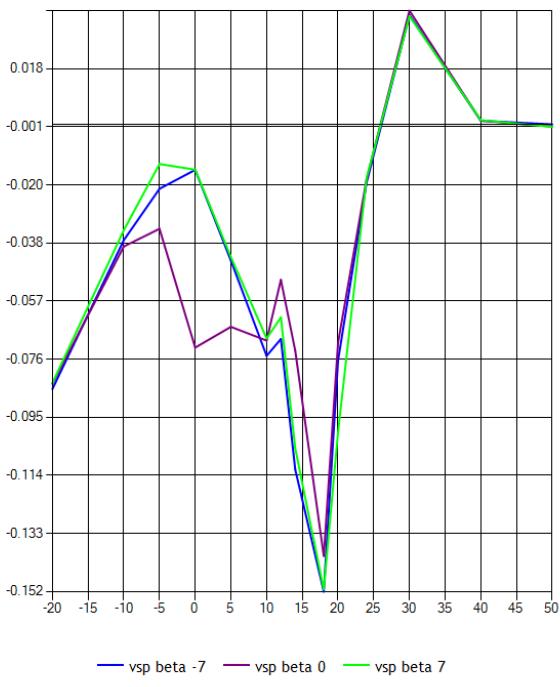
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=10)



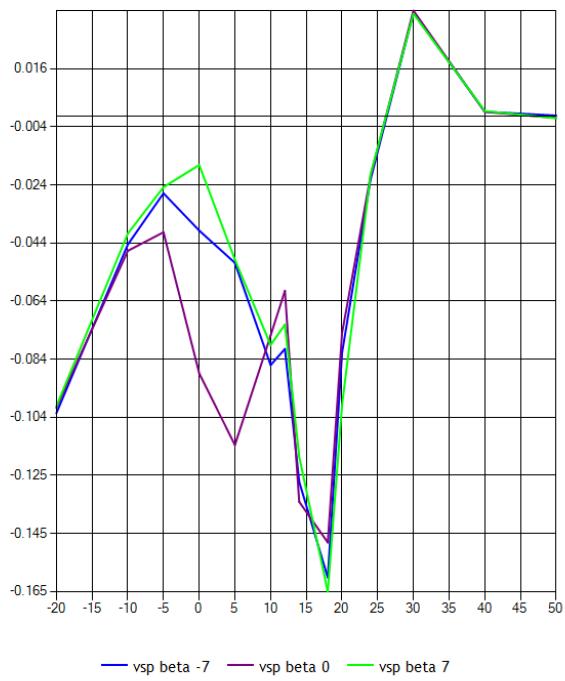
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=20)



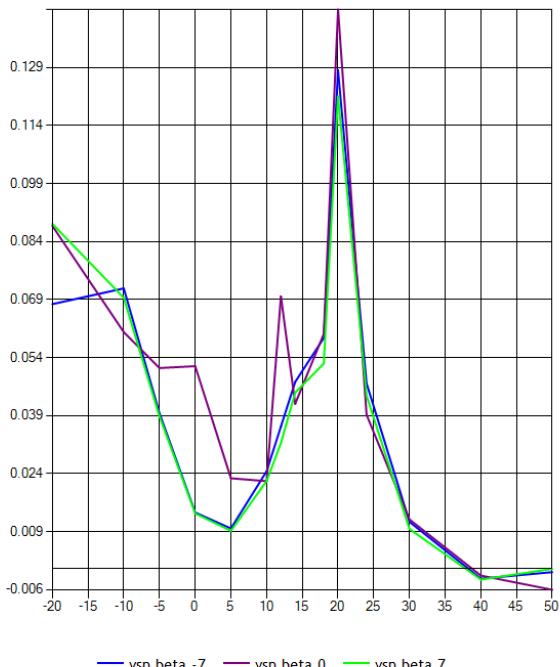
PITCH MOMENT DUE TO ELEVON 1L

CMMDED1L (alpha,beta,DED1L=25)



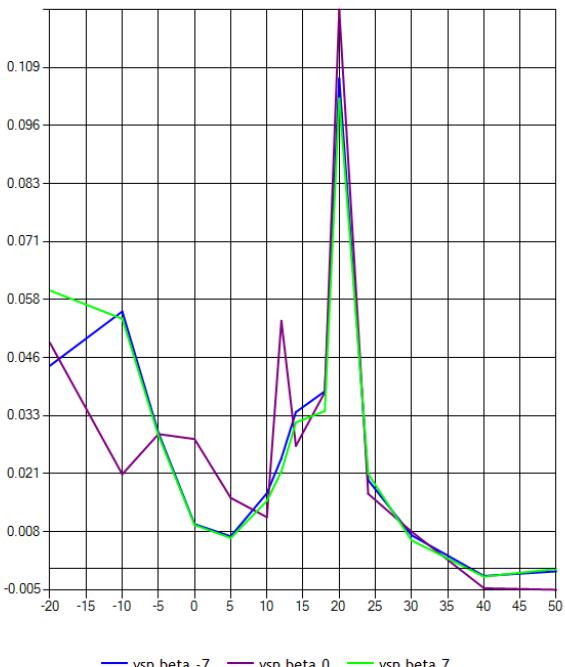
PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=-16)



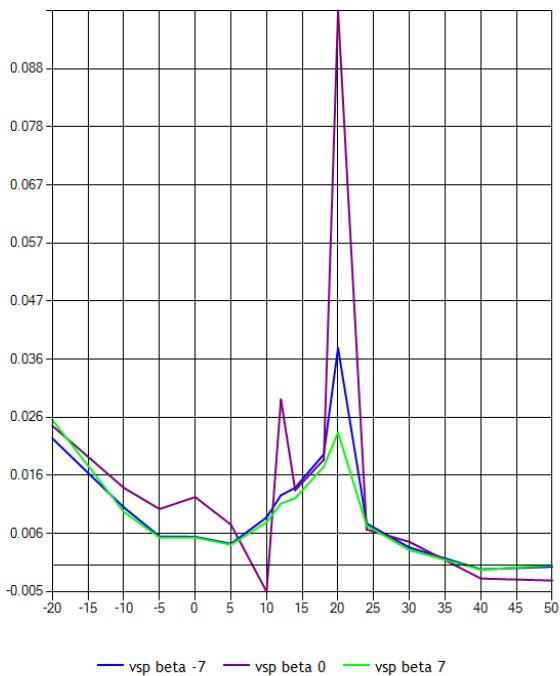
PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=-10)



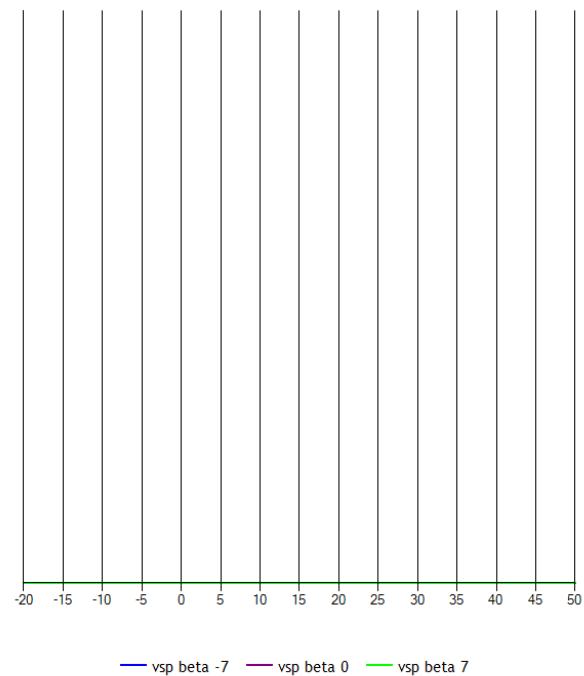
### PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=-5)



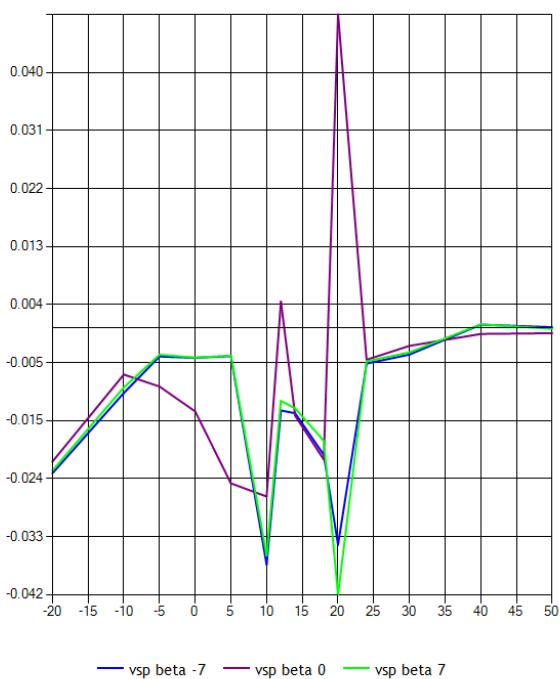
### PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=0)



### PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=5)



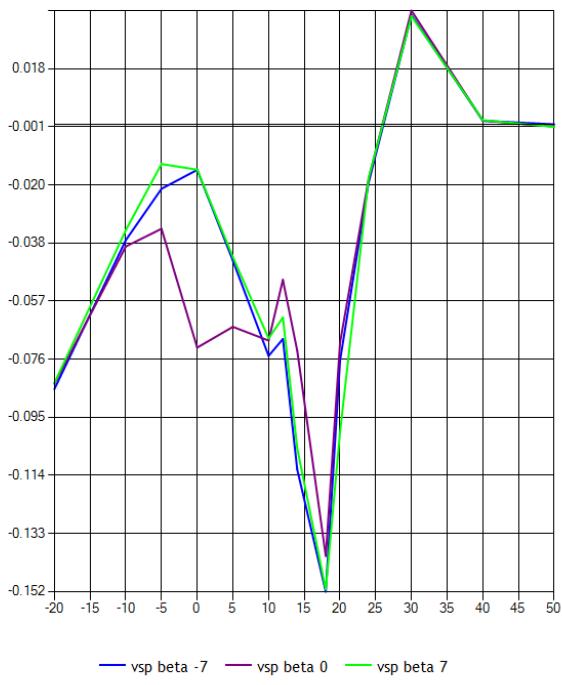
### PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=10)



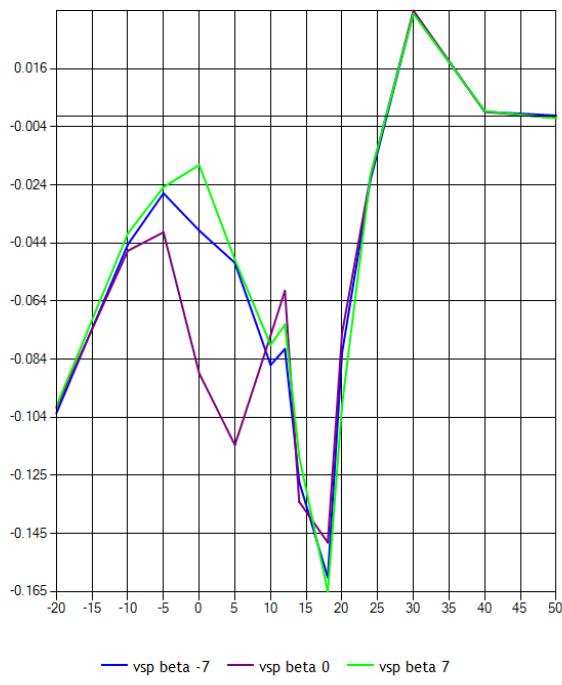
### PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=20)



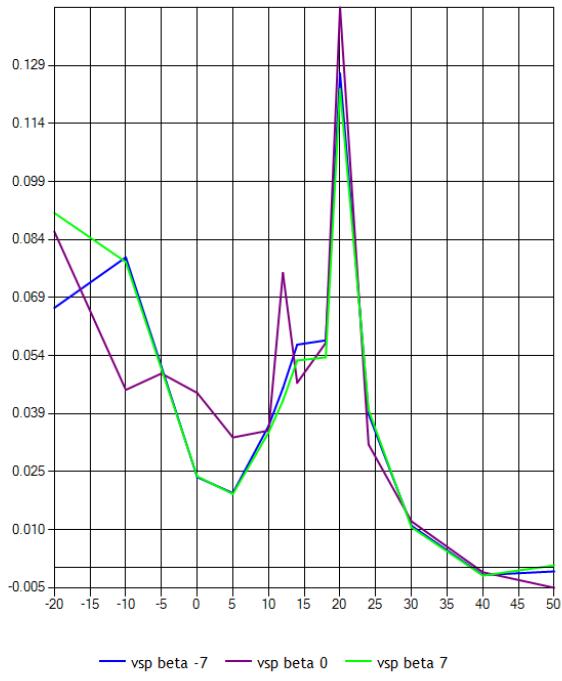
### PITCH MOMENT DUE TO ELEVON 1R

CMMDED1R (alpha,beta,DED1R=25)



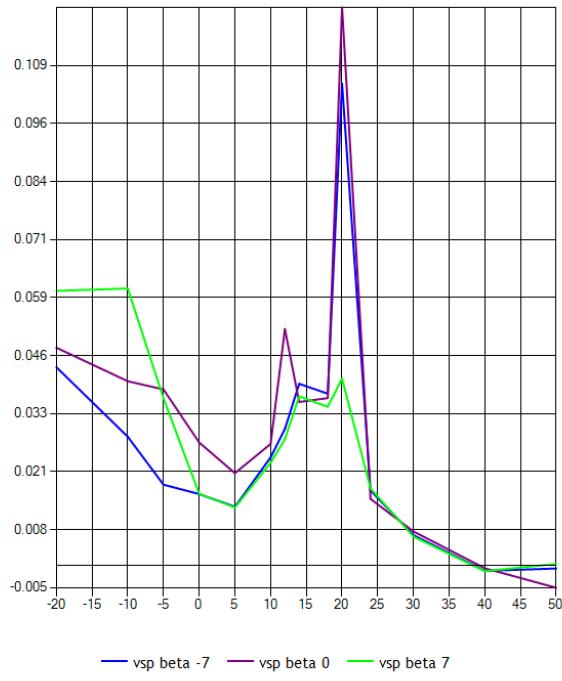
### PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=-16)



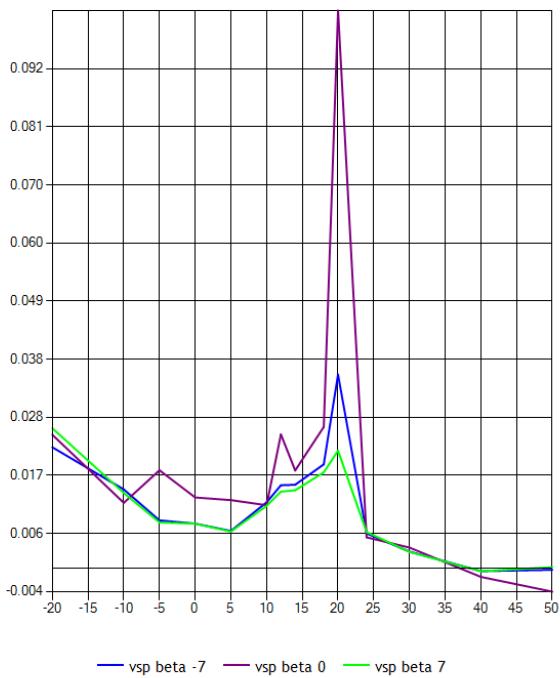
### PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=-10)



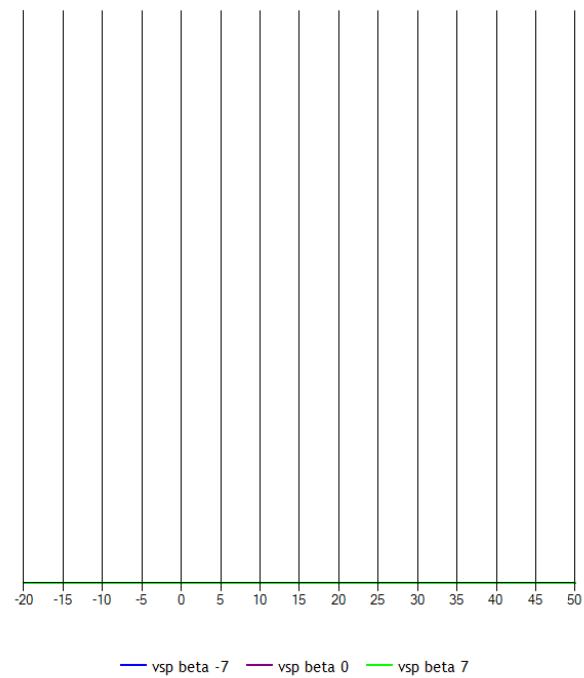
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=-5)



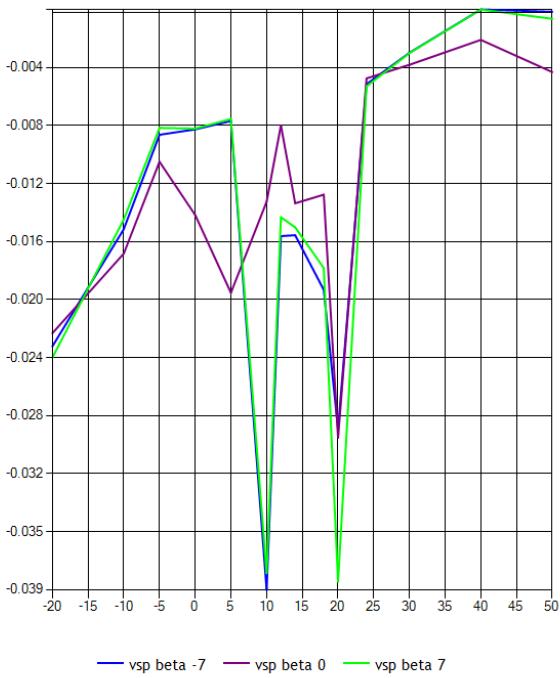
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=0)



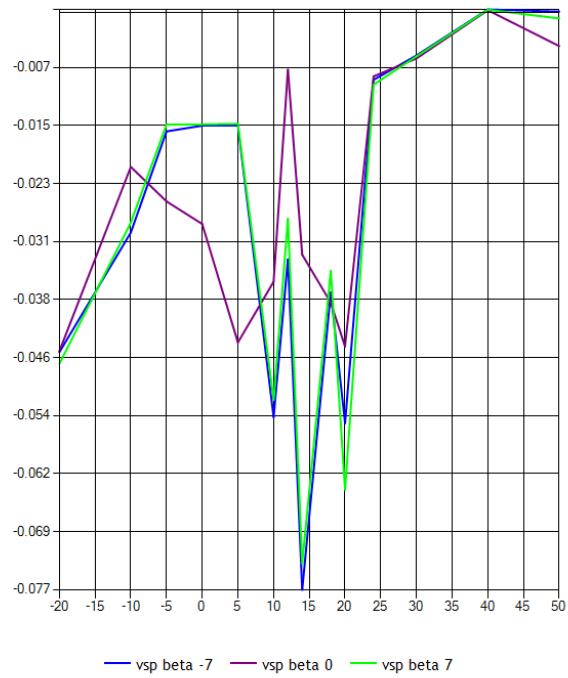
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=5)



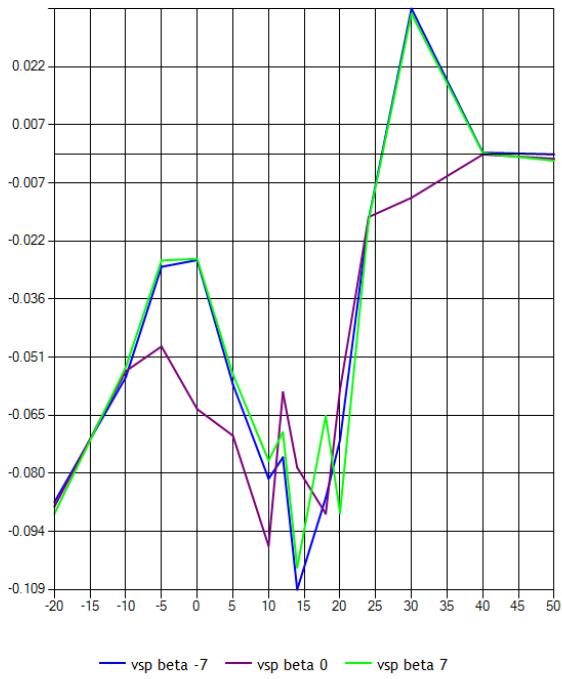
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=10)



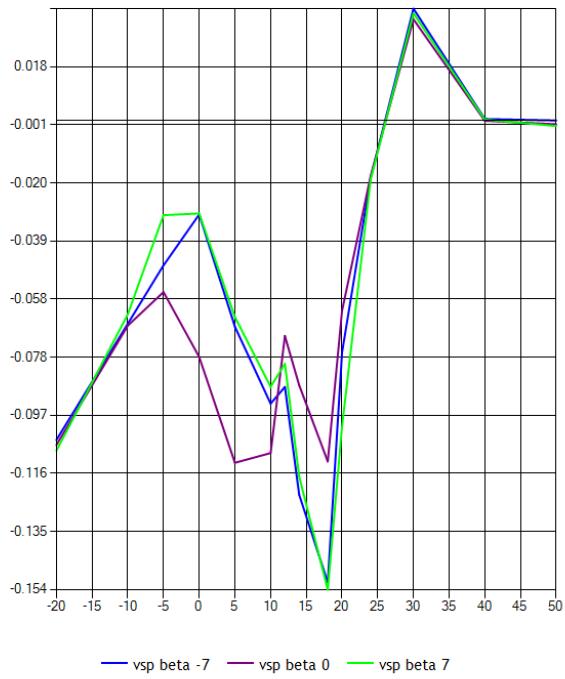
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=20)



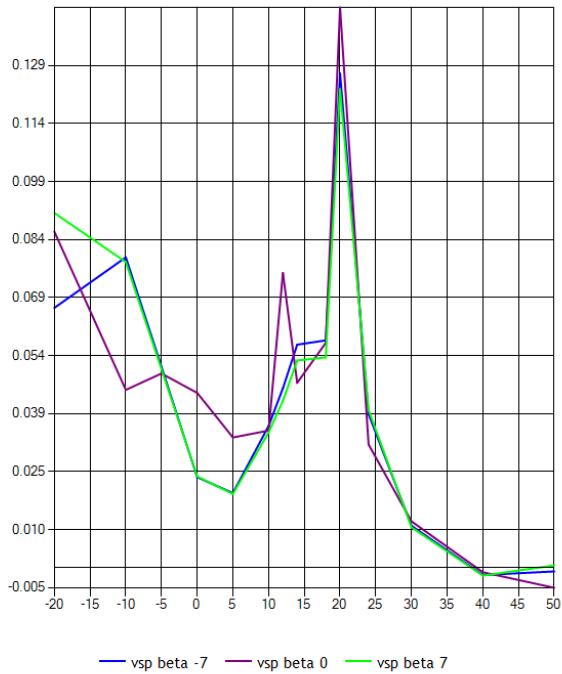
PITCH MOMENT DUE TO ELEVON 2L

CMMDED2L (alpha,beta,DED2L=25)



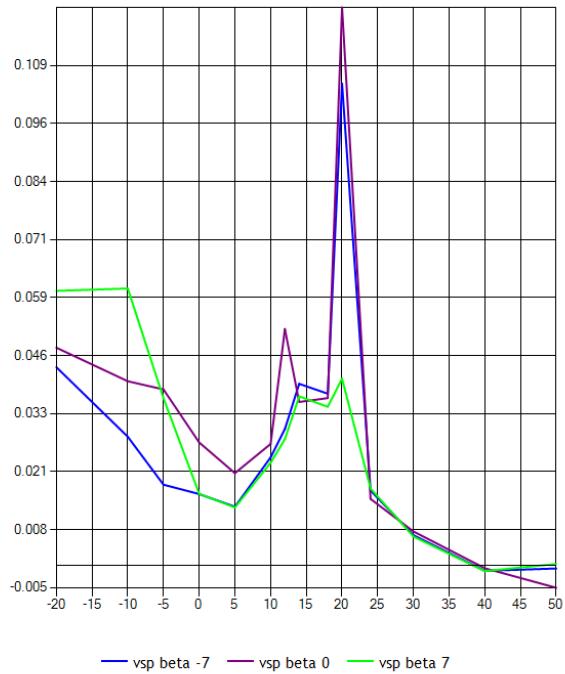
PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=-16)



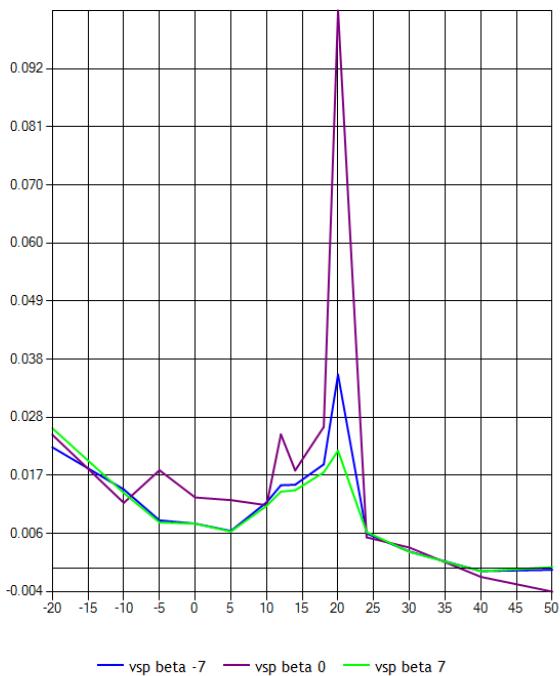
PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=-10)



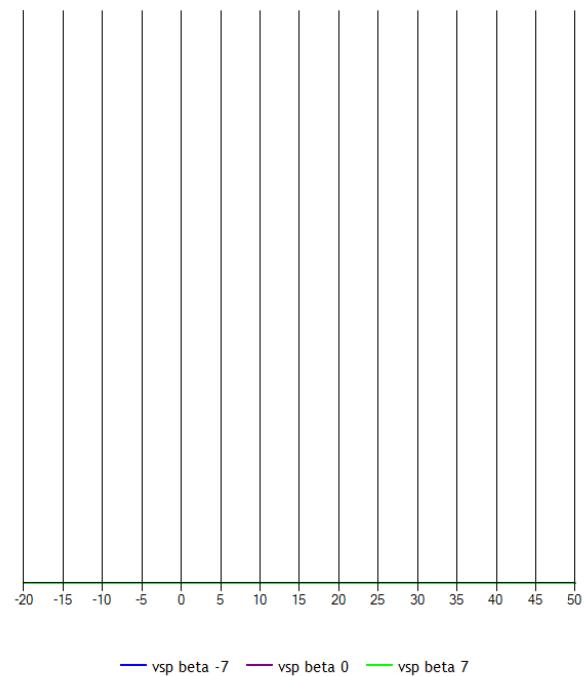
### PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=-5)



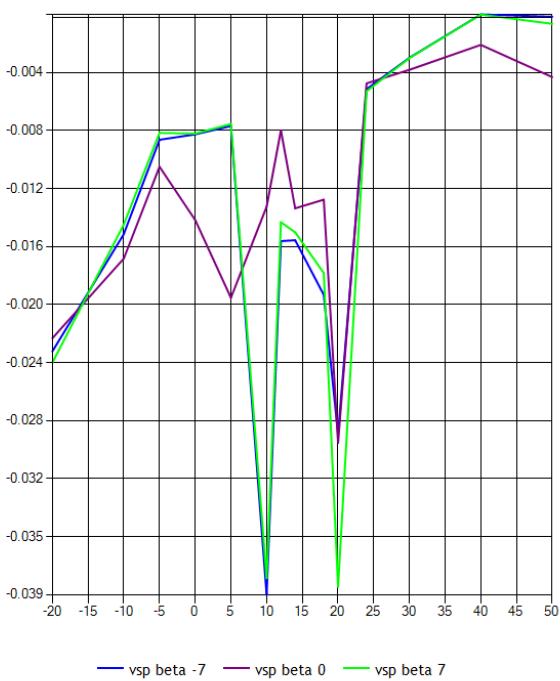
### PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=0)



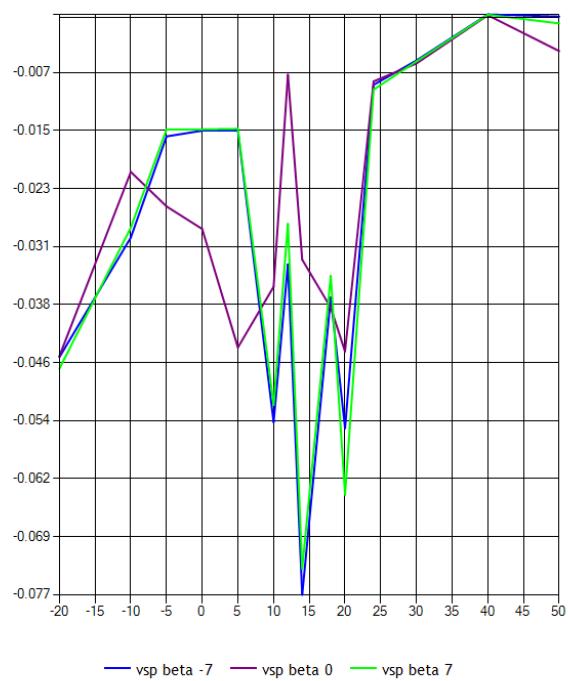
### PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=5)

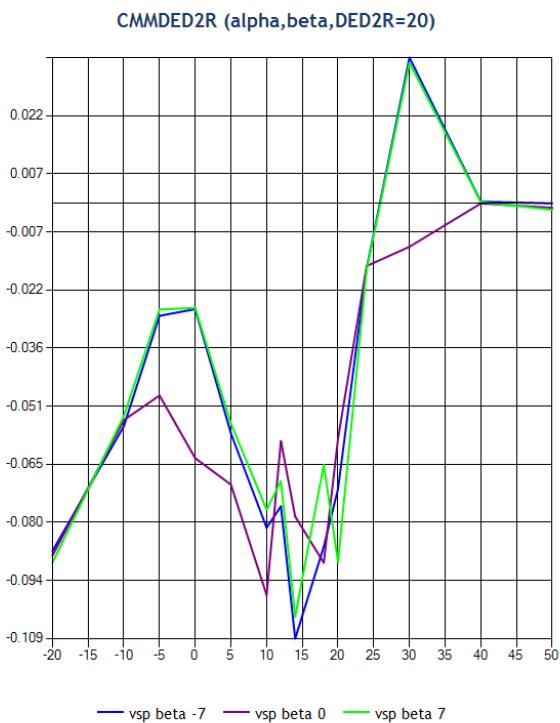


### PITCH MOMENT DUE TO ELEVON 2R

CMMDED2R (alpha,beta,DED2R=10)



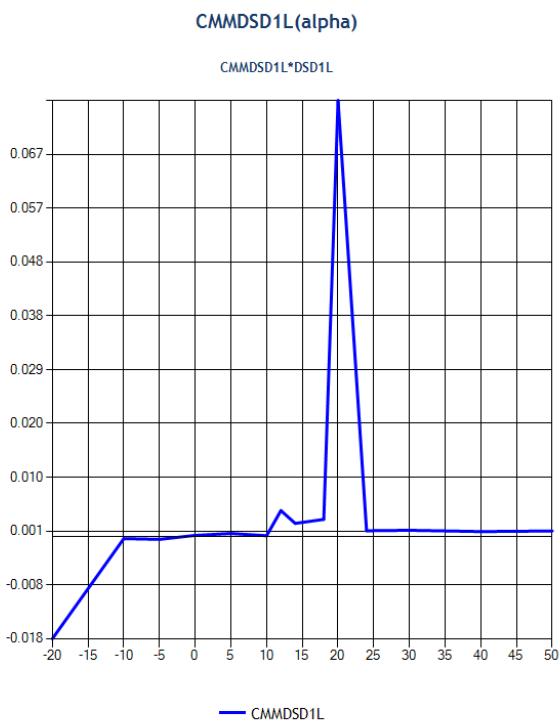
PITCH MOMENT DUE TO ELEVON 2R



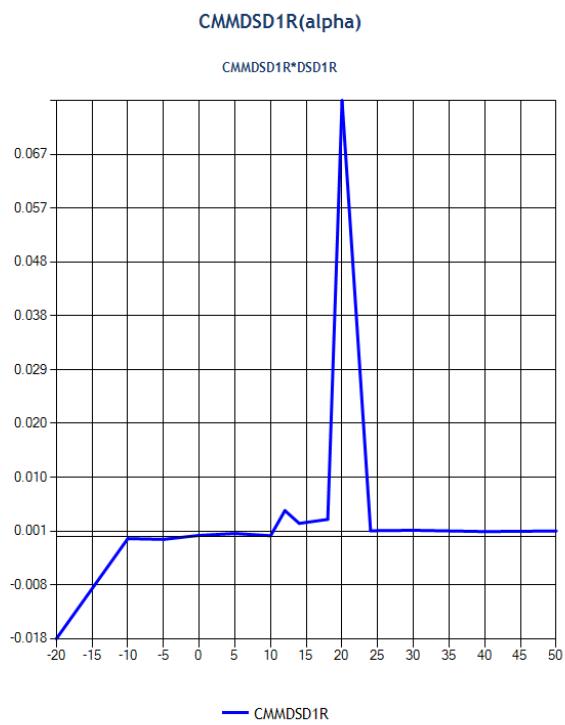
PITCH MOMENT DUE TO ELEVON 2R



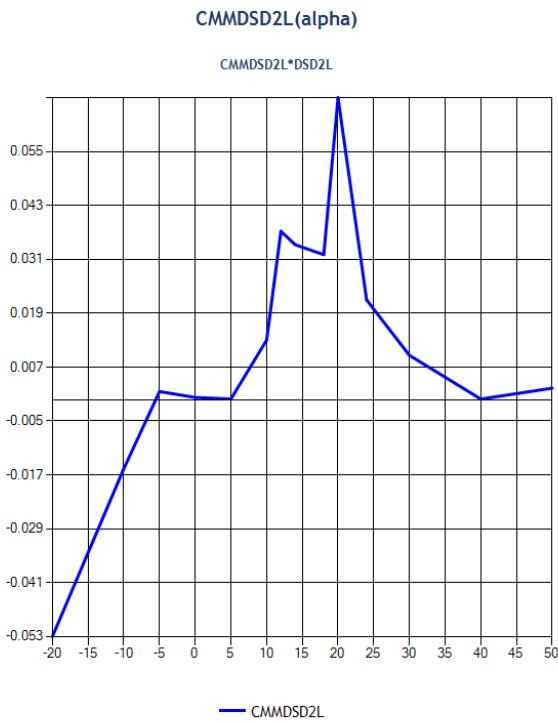
PITCH MOMENT DUE TO LE SLAT 1L



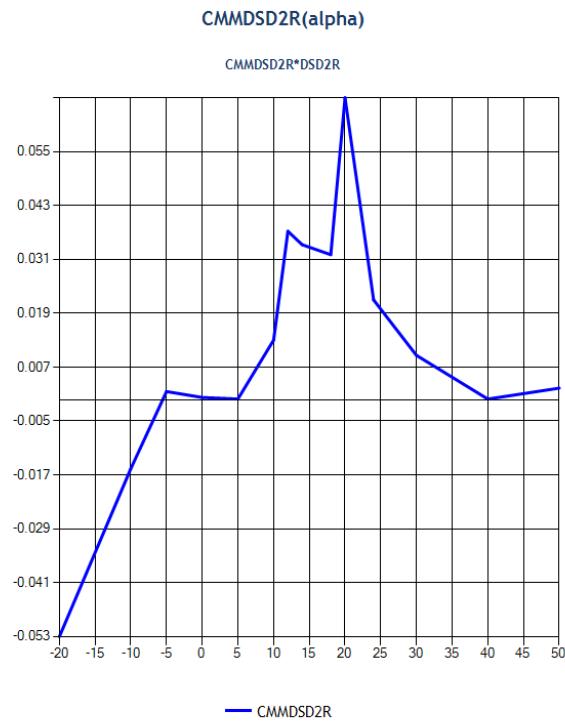
PITCH MOMENT DUE TO LE SLAT 1R



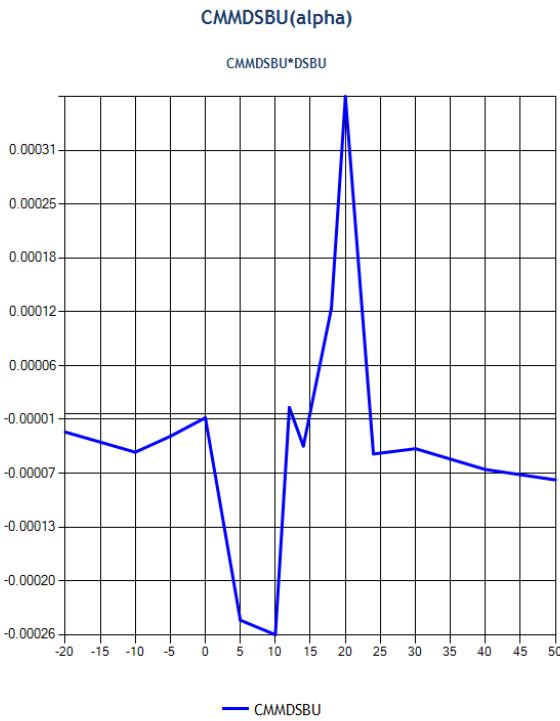
### PITCH MOMENT DUE TO LE SLAT 2L



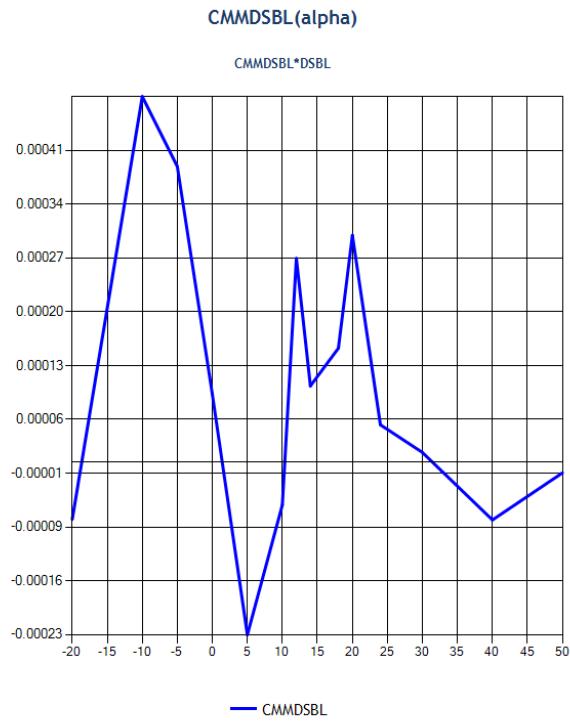
### PITCH MOMENT DUE TO LE SLAT 2R



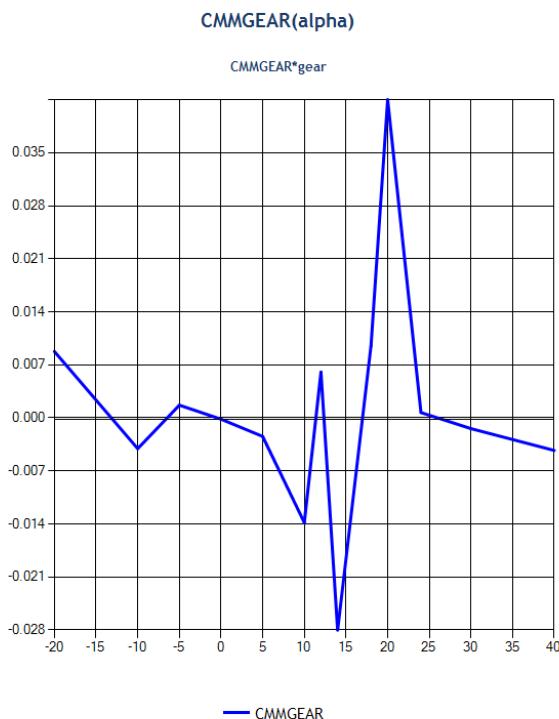
### PITCH MOMENT DUE TO UPPER SPEEDBRAKE DEFLECTION



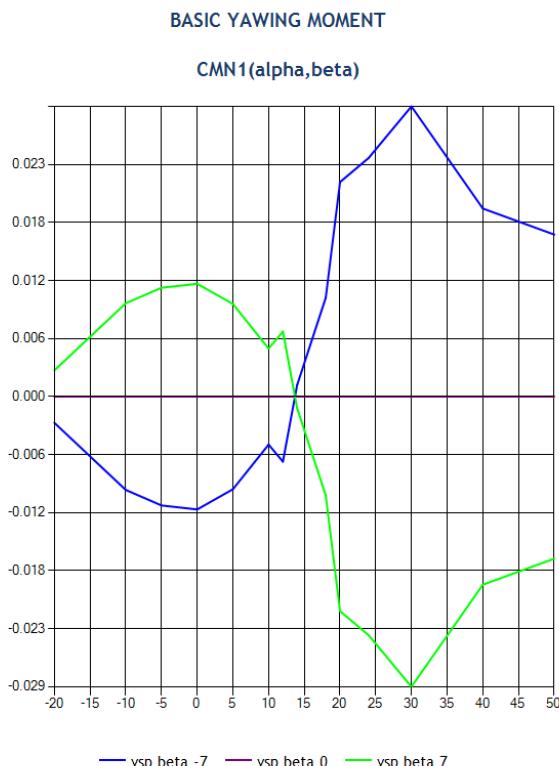
### PITCH MOMENT DUE TO LOWER SPEEDBRAKE DEFLECTION



### PITCHING MOMENT INCREMENT DUE TO GEAR



## YAW



### YAW MOMENT DUE TO ELEVON 1L

**CMNDED1L (alpha,beta,DED1L=-16)**



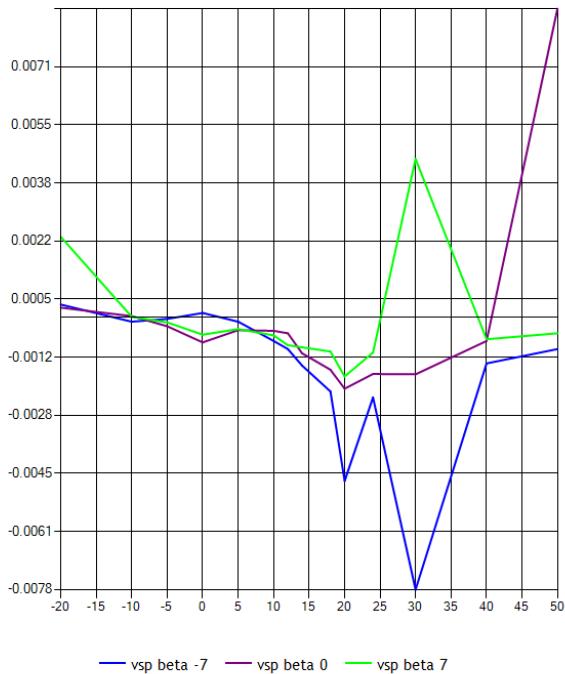
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=-10)



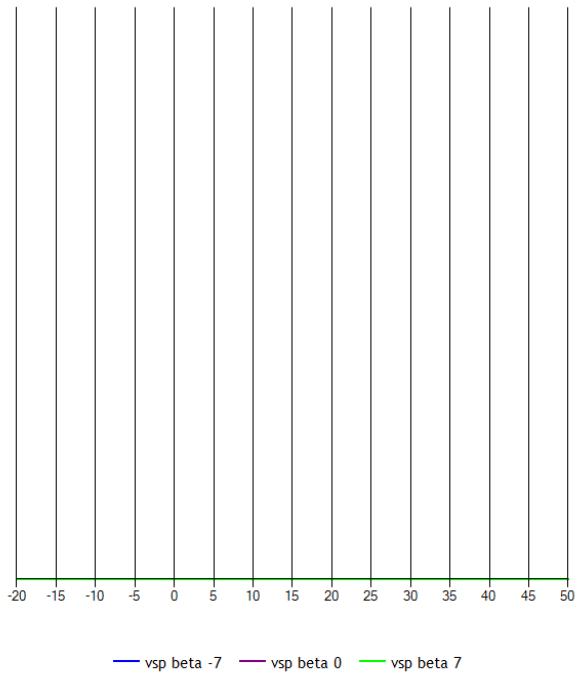
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=-5)



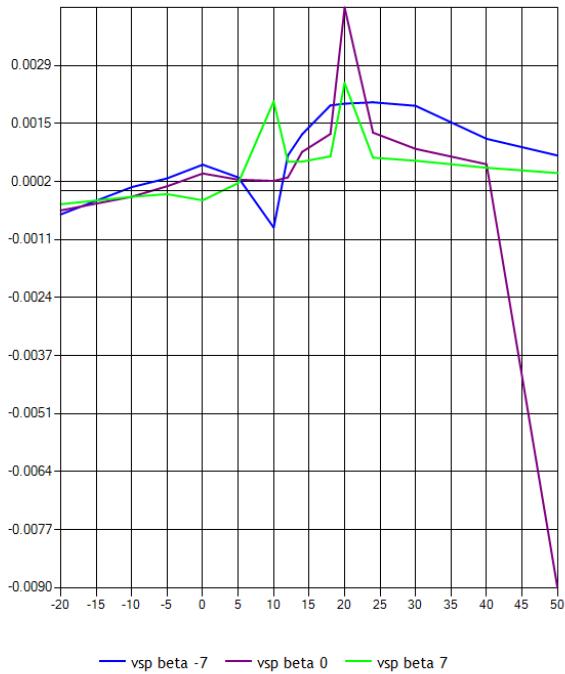
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=0)



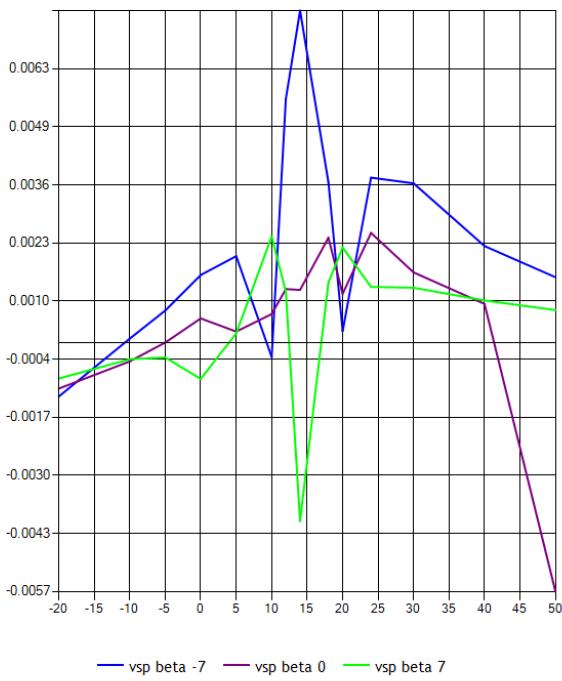
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=5)



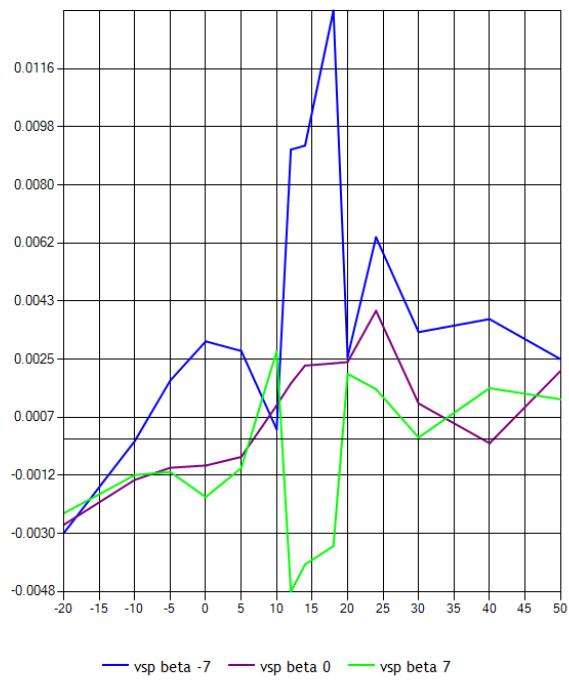
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=10)



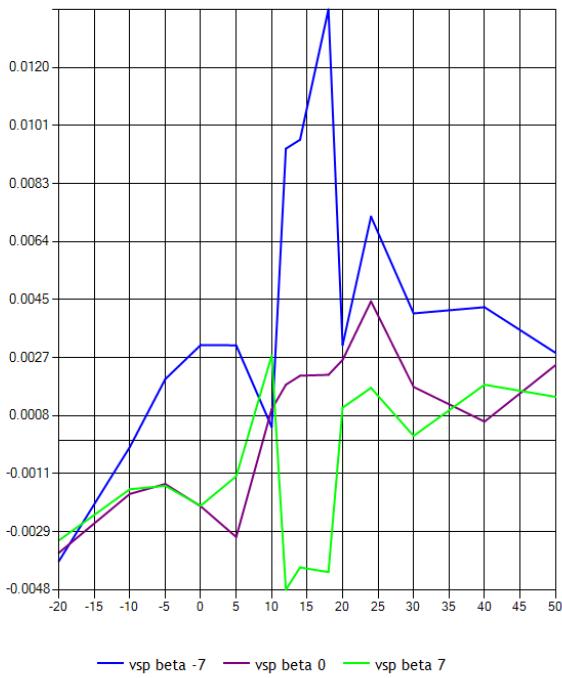
YAW MOMENT DUE TO ELEVON 1L

CMNDED1L (alpha,beta,DED1L=20)



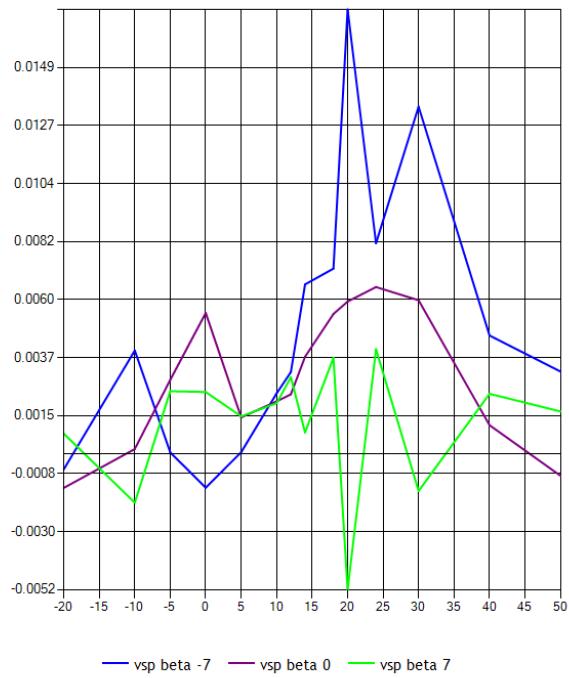
YAW MOMENT DUE TO ELEVON 1L

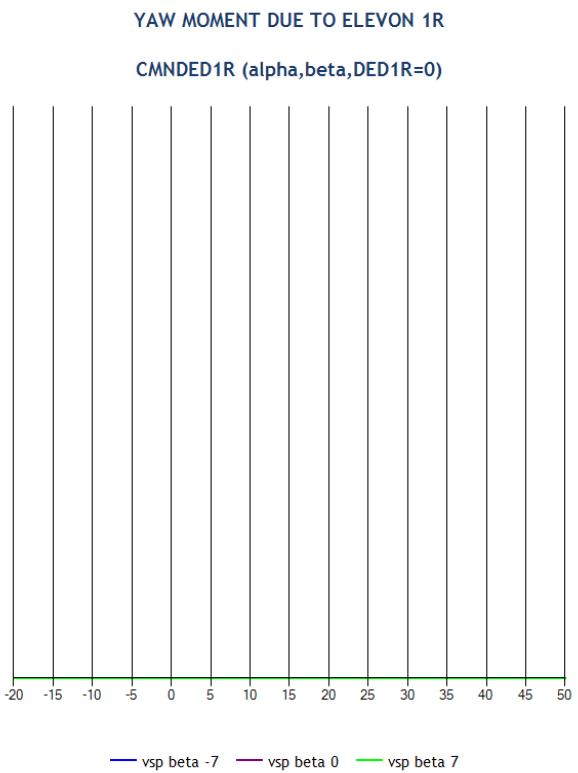
CMNDED1L (alpha,beta,DED1L=25)



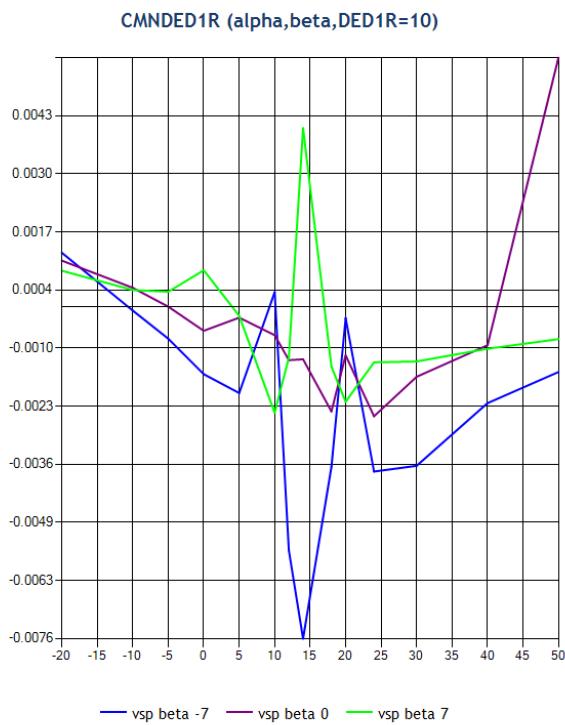
YAW MOMENT DUE TO ELEVON 1R

CMNDED1R (alpha,beta,DED1R=-16)





### YAW MOMENT DUE TO ELEVON 1R



### YAW MOMENT DUE TO ELEVON 1R



### YAW MOMENT DUE TO ELEVON 1R

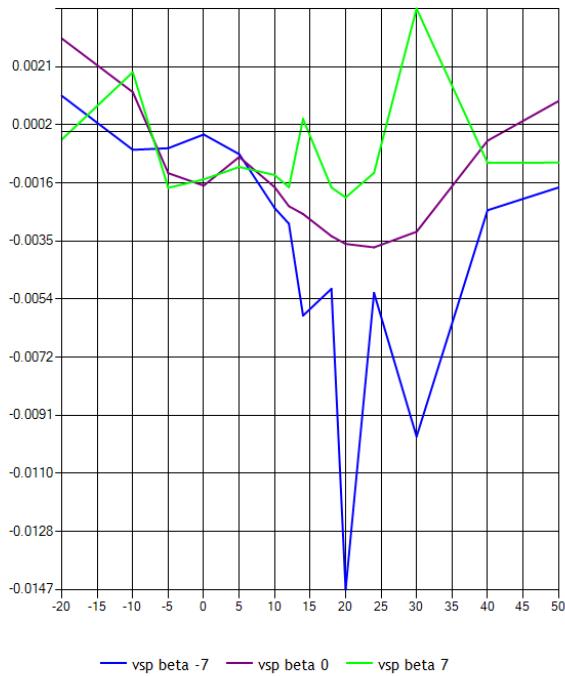


### YAW MOMENT DUE TO ELEVON 2L



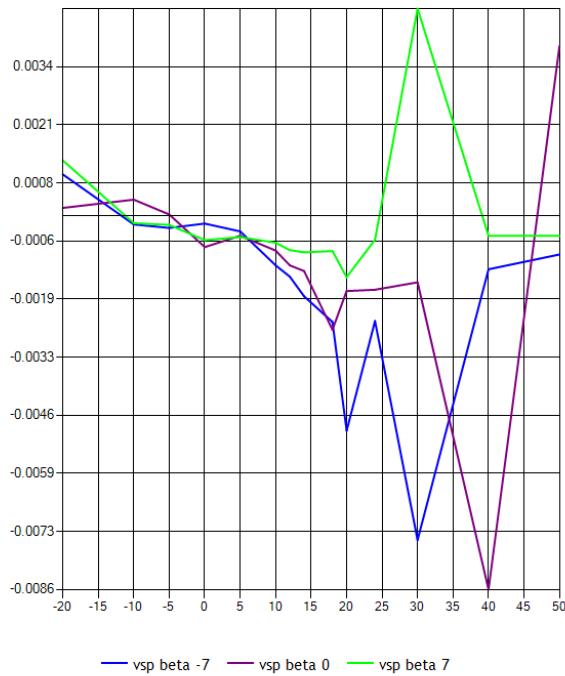
### YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=-10)



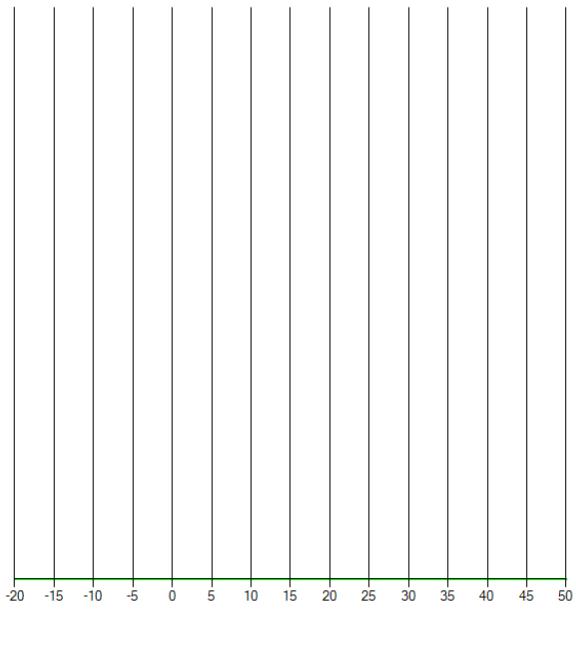
### YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=-5)



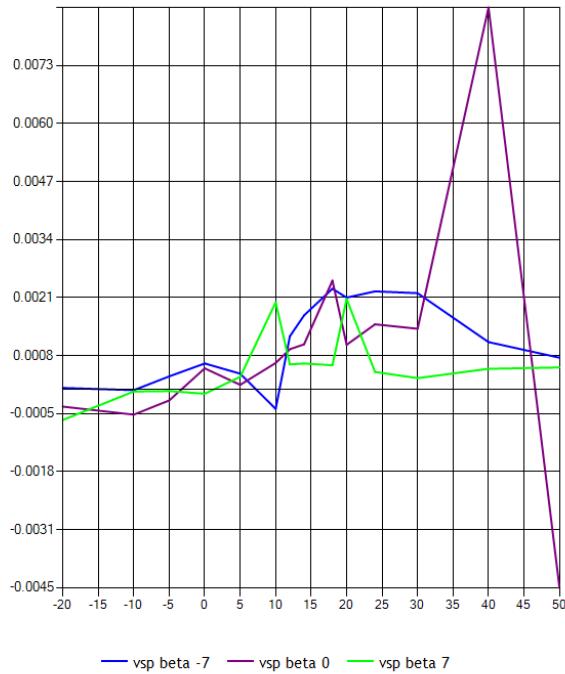
### YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=0)



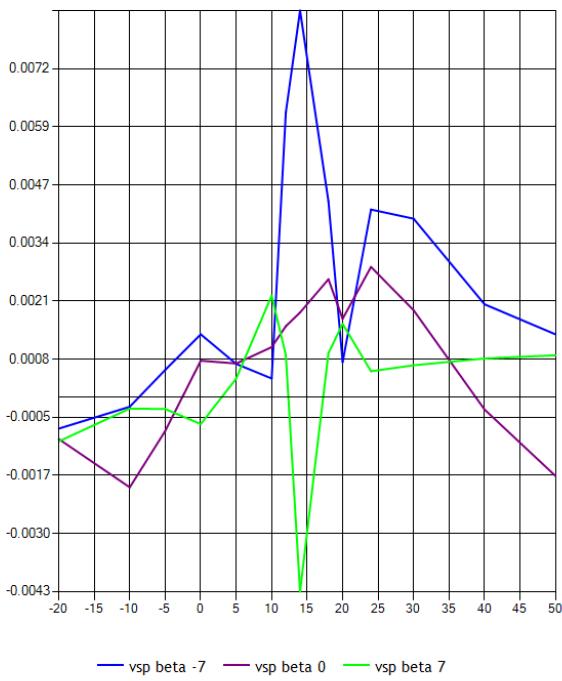
### YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=5)



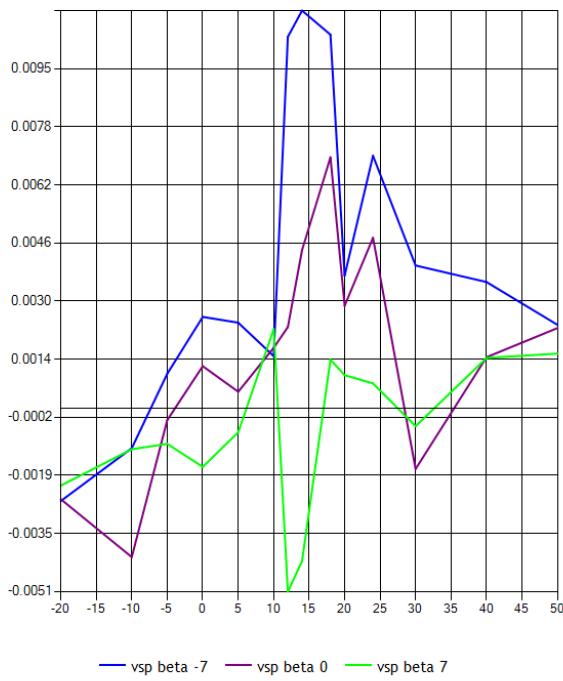
YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=10)



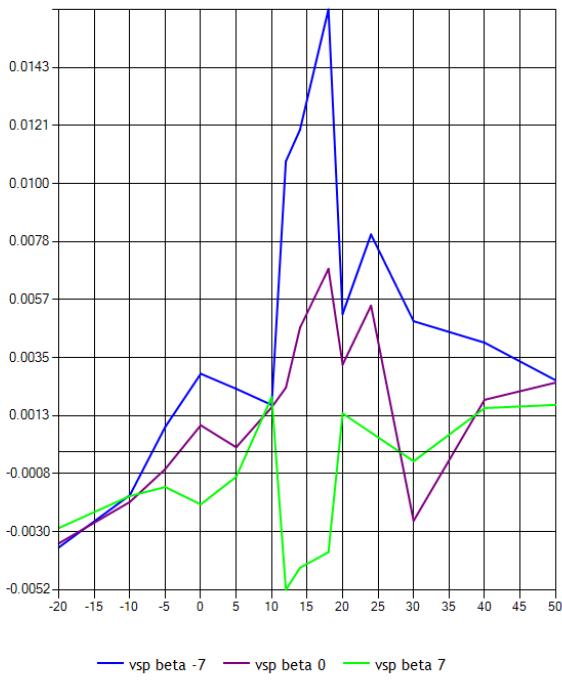
YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=20)



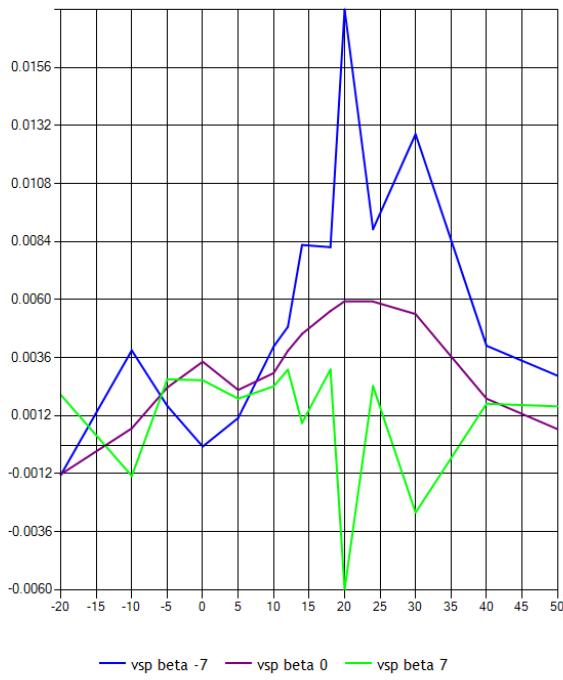
YAW MOMENT DUE TO ELEVON 2L

CMNDED2L (alpha,beta,DED2L=25)

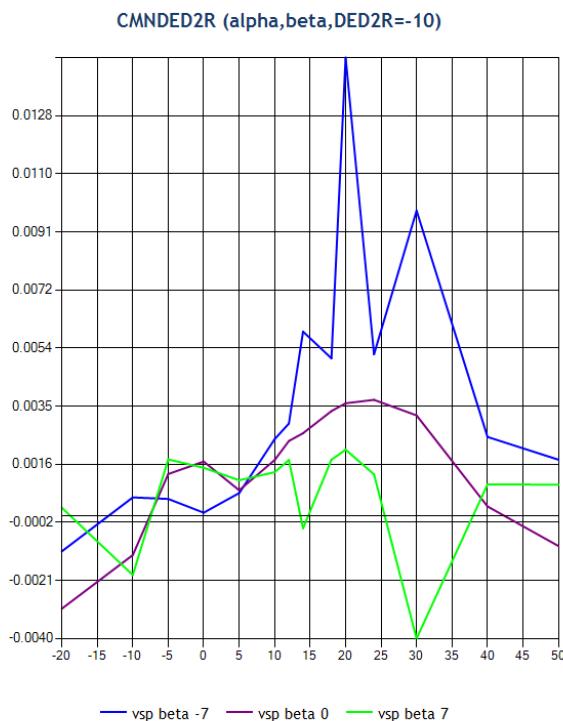


YAW MOMENT DUE TO ELEVON 2R

CMNDED2R (alpha,beta,DED2R=-16)



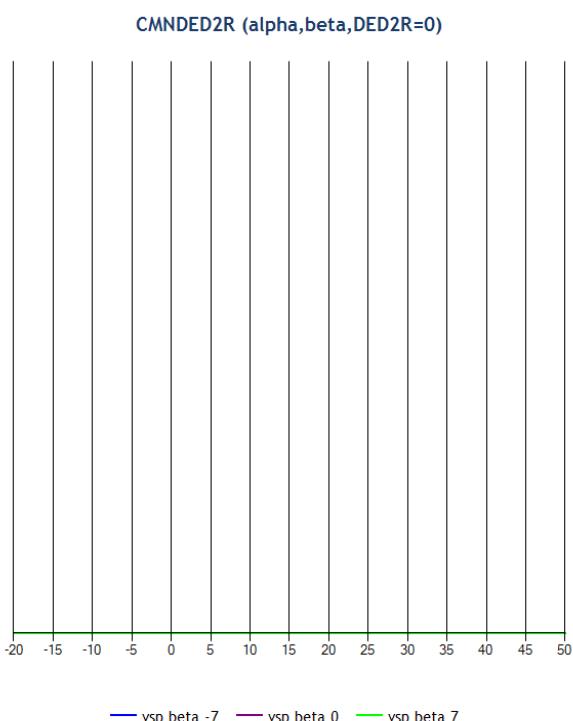
YAW MOMENT DUE TO ELEVON 2R



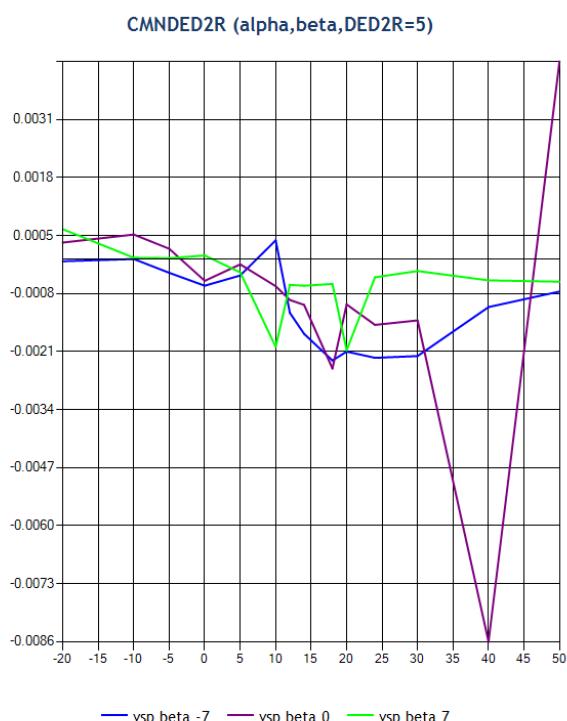
YAW MOMENT DUE TO ELEVON 2R



YAW MOMENT DUE TO ELEVON 2R

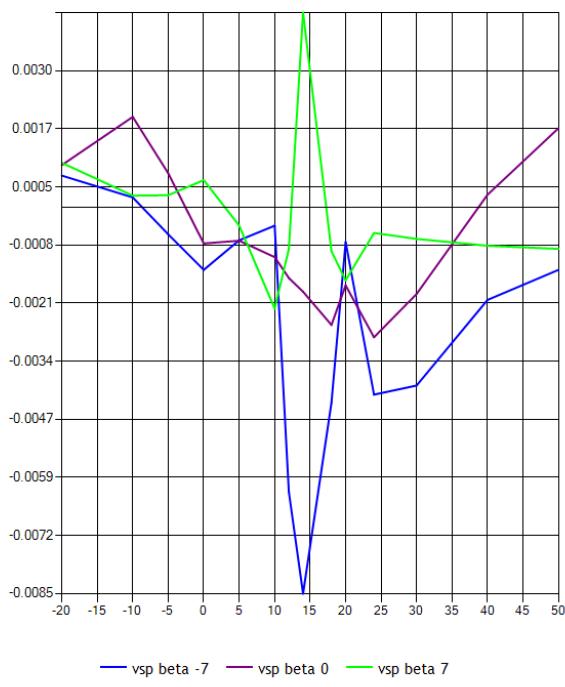


YAW MOMENT DUE TO ELEVON 2R



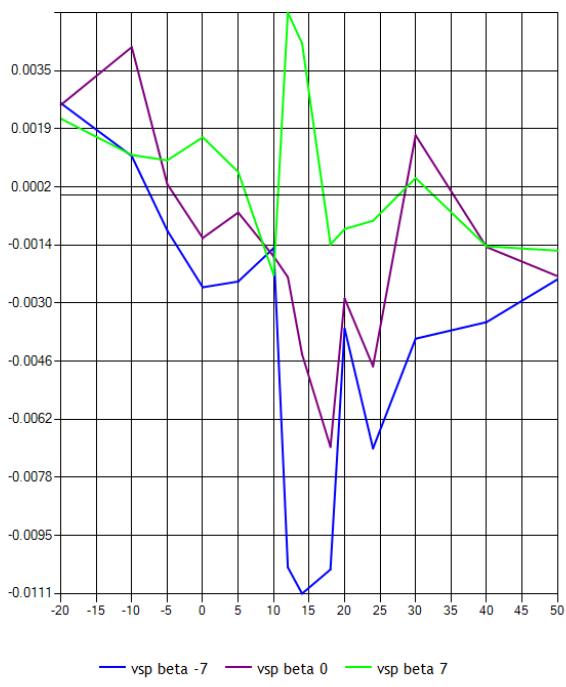
YAW MOMENT DUE TO ELEVON 2R

CMNDED2R (alpha,beta,DED2R=10)



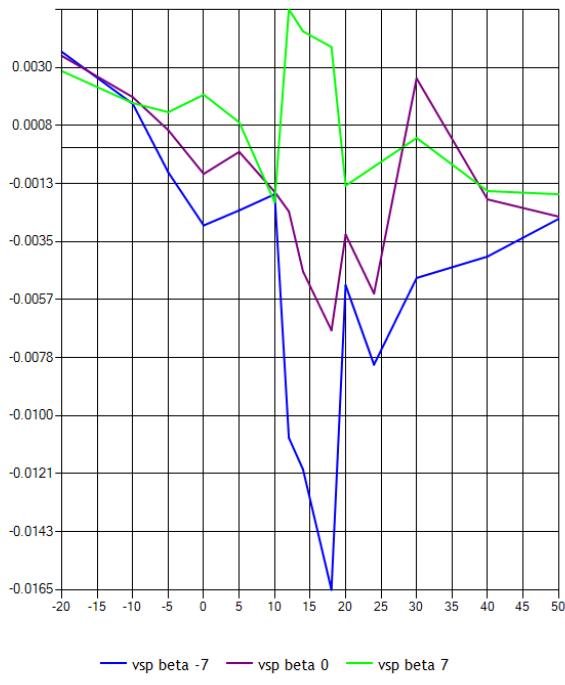
YAW MOMENT DUE TO ELEVON 2R

CMNDED2R (alpha,beta,DED2R=20)



YAW MOMENT DUE TO ELEVON 2R

CMNDED2R (alpha,beta,DED2R=25)



YAW MOMENT DUE TO LE SLAT 1L

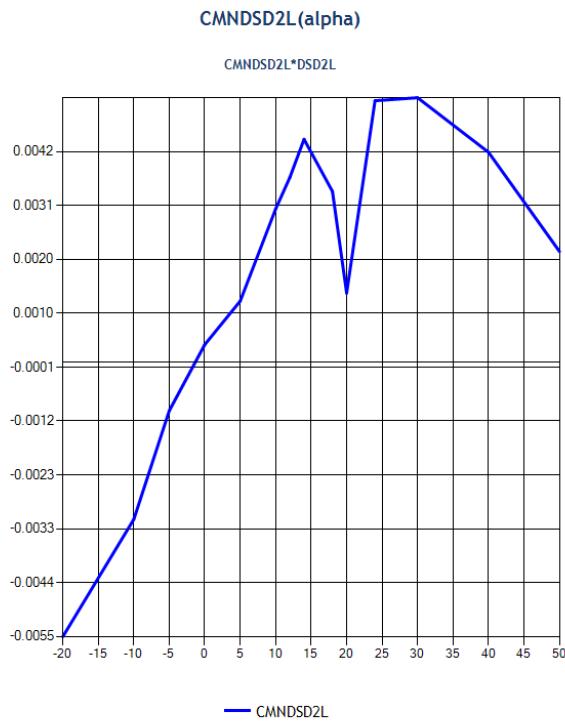
CMNDSD1L(alpha)



YAW MOMENT DUE TO LE SLAT 1R



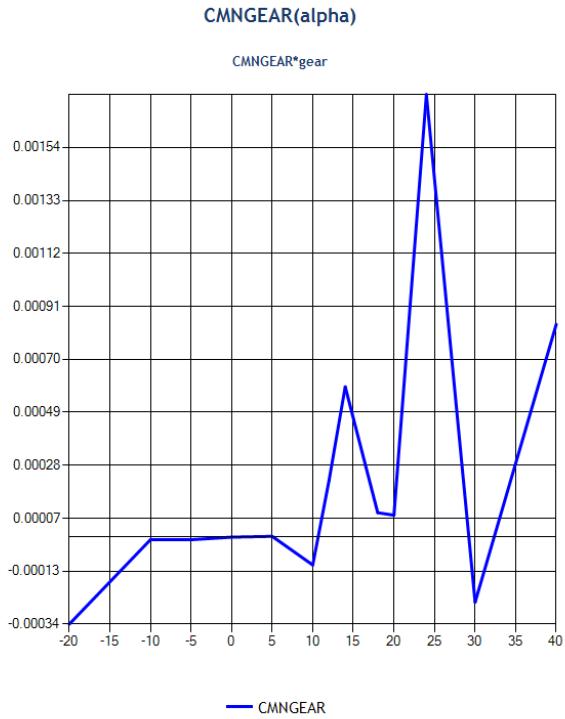
YAW MOMENT DUE TO LE SLAT 2L



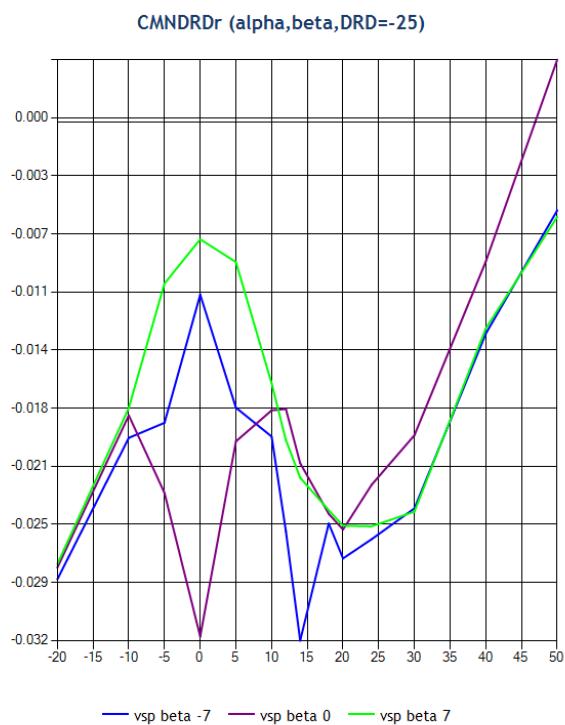
YAW MOMENT DUE TO LE SLAT 2R



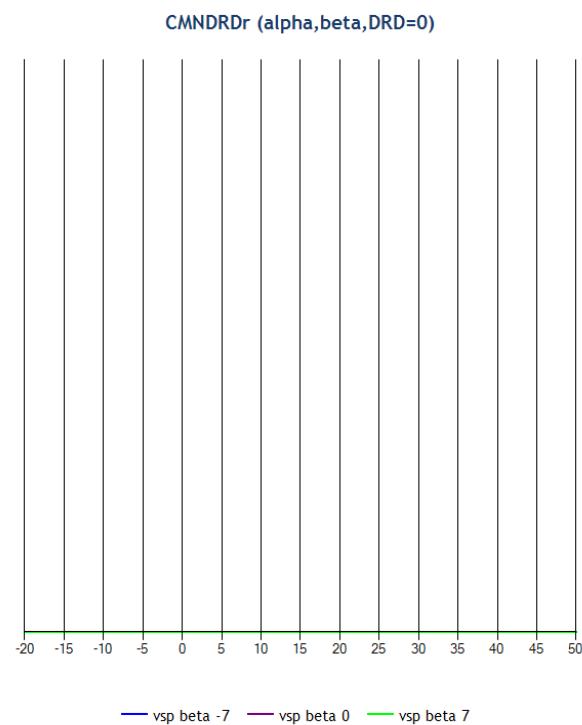
YAWING MOMENT INCREMENT DUE TO GEAR



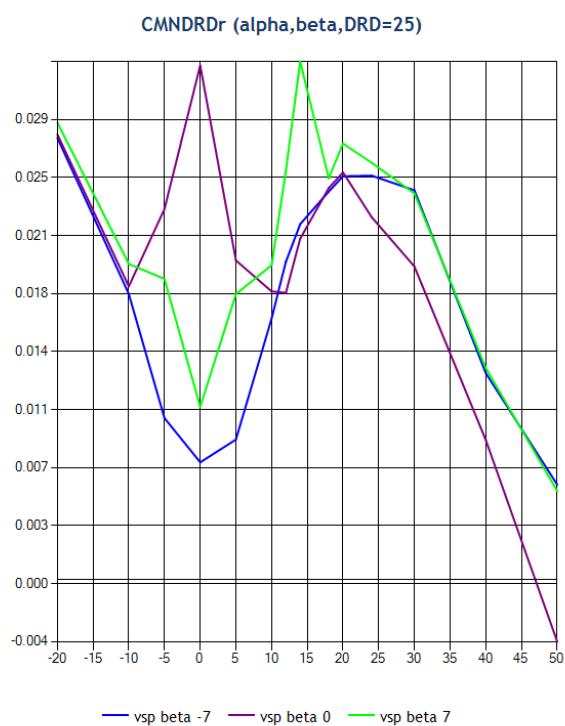
### YAWING MOMENT DUE TO RUDDER DEFLECTION



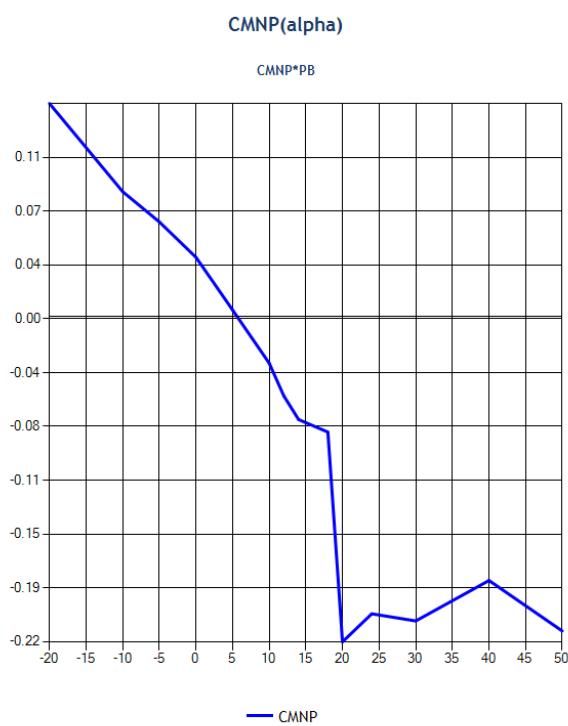
### YAWING MOMENT DUE TO RUDDER DEFLECTION



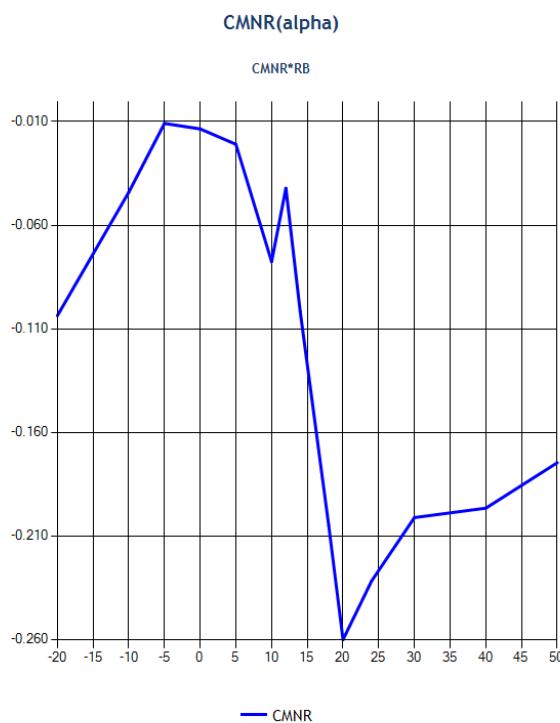
### YAWING MOMENT DUE TO RUDDER DEFLECTION



### YAWING MOMENT DUE TO ROLL RATE



## YAW DAMPING DERIVATIVE



## References

- Richard Harrison, rjh@zaretto.com: Mirage 2000-5 Aerodynamic data built from vspaero; AeroRP (6.641, 0, 1.317)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)	6.64	0.00	1.32	M
Aircraft CG	6.64	0.00	1.32	M

Element	Unit
Wingspan	M
Wing Area	M <sup>2</sup>
Wing Incidence	DEG
ClMax	ND

## Mass and balance

Element	Unit
Empty Weight	LBS
Ixx	KG*M <sup>2</sup>
Iyy	KG*M <sup>2</sup>
Izz	KG*M <sup>2</sup>
Ixz	KG*M <sup>2</sup>

Element	X	Y	Z	Unit	Weight

## Ground Reactions

Element	X	Y	Z	Unit	Index
NOSE_LG	4.01	0.00	-2.73	M	0
LEFT_MLG	7.04	-1.80	-2.65	M	1
RIGHT_MLG	7.04	1.80	-2.65	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	16.19	0.00	1.32	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	6.64	0.00	1.32	M	10 LBS	0	1	
External Tank	6.64	0.00	0.01	M	1200 KG	1	2	50 KG
Right Wing Tank	6.64	4.00	0.92	M	385 LBS	2	3	100 LBS
Left Wing Tank	6.64	-4.00	0.92	M	385 LBS	3	3	100 LBS
Main Tank	6.64	0.00	1.32	M	2128 KG	4	4	50 KG

## Systems

Name

Mirage-2000-hydraulics

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Mirage-2000-electrics

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Mirage-2000-avionics

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Mirage-2000-ecs

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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-1R-pos-deg

---

fcs/slat-2L-pos-deg

---

fcs/slat-2R-pos-deg

---

gear/gear-pos-norm