Free Variables	Units	Description
$C_{D_{ht}}$	[−]	Horizontal tail drag coefficient
$C_{D_{0_{ht}}}$	[−]	Horizontal tail parasitic drag coefficient
$C_{L_{ht}}$	[−]	Lift coefficient (htail)
C_{L_w}	[−]	Lift coefficient (wing)
$C_{L_{\alpha h_0}}$	[−]	Isolated lift curve slope (htail)
$C_{L_{\alpha,ht}}$	[−]	Lift curve slope (htail)
$C_{L_{\alpha,w}}$	[−]	Lift curve slope (wing)
D_{ht}	[N]	Horizontal tail drag
L_{ht}	[N]	Horizontal tail downforce
$L_{ht_{max}}$	[N]	Maximum tail load
M	[−]	Mach number
Re_{ht}	[−]	Horizontal tail Reynolds number
$S.M.$	[−]	Stability margin
S_{ht}	[m^2]	Horizontal tail area
V_∞	[$\frac{m}{s}$]	Freestream velocity
V_{ht}	[−]	Horizontal tail volume
W_{ht}	[lbf]	Horizontal tail weight
AR_w	[−]	Wing aspect ratio
AR_{ht}	[−]	Horizontal tail aspect ratio
$\Delta x_{lead_{ht}}$	[m]	Distance from CG to HT leading edge
$\Delta x_{trail_{ht}}$	[m]	Distance from CG to HT trailing edge
α_{ht}	[−]	Horizontal tail angle of attack
$\bar{c}_w$	[m]	Mean aerodynamic chord (wing)
$\bar{c}_{ht}$	[m]	Mean aerodynamic chord (ht)
λ_{ht}	[−]	Horizontal tail taper ratio
μ	[$\frac{N \cdot s}{m^2}$]	Dynamic viscosity
ρ_∞	[$\frac{kg}{m^3}$]	Freestream density
τ_{ht}	[−]	Horizontal tail thickness/chord ratio
b_{ht}	[m]	Horizontal tail span
$c_{root_{ht}}$	[m]	Horizontal tail root chord
$c_{tip_{ht}}$	[m]	Horizontal tail tip chord
e_{ht}	[−]	Oswald efficiency factor
$f(\lambda_{ht})$	[−]	Empirical efficiency function of taper
l_{fuse}	[m]	Fuselage length
l_{ht}	[m]	Horizontal tail moment arm
m_{ratio}	[−]	Ratio of HT and wing lift curve slopes
p_{ht}	[−]	Substituted variable = 1 + 2*taper
q_{ht}	[−]	Substituted variable = 1 + taper
w_{fuse}	[m]	Fuselage width
x_w	[m]	Position of wing aerodynamic center

x_{CG}	[m]	x-location of CG
$y_{\bar{c}_{ht}}$	[m]	Spanwise location of mean aerodynamic chord