

Appendix A

Mathematical Form of the Required Freight Rate

Rfr =

$$\begin{aligned}
 & 4.08163 \cdot 10^{-7} J_2 + H_0.191743 + 0.350025 Cb - 0.000139214 Ntd \cdot x_1 \cdot x_2 + 4.998 \cdot 10^{-6} \cdot x_1 \cdot x_2 \cdot x_3 - \\
 & 0.0000461634 Cb \cdot x_1 \cdot x_2 \cdot x_3 \cdot H - 0.3572 - 0.0187 \cdot x_1 L + \frac{291.667}{x_5} \\
 & 14000. + S_s + 3817.27 Hx_1 \cdot x_2 \cdot x_3 L^{0.166667} + 790.174 Hx_1 \cdot x_2 \cdot x_3 L^{0.543} + 230.286 Hx_1 \cdot x_2 \cdot x_3 L^{0.6516} + \\
 & 178.724 Hx_1 \cdot x_2 \cdot x_3 L^{0.724} + 3.04265 Hx_1 \cdot x_2 \cdot x_3 L^{1.003} + 1.50708 Cb Hx_1 \cdot x_2 \cdot x_3 L^{1.003} + \\
 & 0.00282358 J - 8.3 + \frac{x_1^{1.691}}{x_3} Hx_1 \cdot x_2 \cdot x_3 L^{1.003} + 0.00139857 Cb J - 8.3 + \frac{x_1^{1.691}}{x_3} Hx_1 \cdot x_2 \cdot x_3 L^{1.003} + \\
 & 3.13404 \cdot \frac{J}{K} H_1 + 0.49532 Cb L \cdot \frac{J}{K} + 0.000928 J - 8.3 + \frac{x_1^{1.691}}{x_3} Hx_1 \cdot x_2 \cdot x_3 L^{1.003} \cdot \frac{V}{W}^{0.85} + \\
 & H_5000.8 + 261.8 \cdot x_1 L \cdot x_5 L \cdot H_{104.183} + H_0.522657 - 0.350025 Cb L \cdot x_5 + x_1 H_5.45417 + \\
 & H_0.0374 + 0.000139214 Ntd \cdot x_2 + H - 4.998 \cdot 10^{-6} + 0.0000461634 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L + \\
 & H_2.03 H_0.3572 + 0.0187 \cdot x_1 L \cdot x_1 \cdot x_2 \cdot x_3 \cdot x_5 L \cdot H_{104.183} + H_0.522657 - 0.350025 Cb L \cdot x_5 + x_1 H_5.45417 + \\
 & H_0.0374 + 0.000139214 Ntd \cdot x_2 + H - 4.998 \cdot 10^{-6} + 0.0000461634 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L + \\
 & H_{211418}. AT \cdot c_6 H_{19.1016} + 1. \cdot x_1 L \cdot x_5^3 \cdot L \cdot H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L - \\
 & I_{193.328} \cdot \frac{Cm}{Cm} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2 \cdot x_5^3 \cdot M' \cdot H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L + \\
 & H_{124.041} Cm^{3 \cdot 2} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2 \cdot x_5^3 \cdot L \cdot H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L - \\
 & I_{160.187} \cdot \frac{Cm}{Cm} \cdot Cw \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2 \cdot x_5^3 \cdot M' \cdot H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L + \\
 & I_{565.838} \cdot \frac{Cm}{Cm} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2 \cdot x_5^3 \cdot M' \cdot H_{100}. + x_1 L^{0.16} H_{748369}. + H_{3754.34} - 2514.29 Cb L \\
 & x_5 + x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L L - \\
 & H_{363.047} Cm^{3 \cdot 2} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2 \cdot x_5^3 \cdot L \cdot H_{100}. + x_1 L^{0.16} H_{748369}. + H_{3754.34} - 2514.29 Cb L \\
 & x_5 + x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L L + \\
 & I_{468.84} \cdot \frac{Cm}{Cm} \cdot Cw \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2 \cdot x_5^3 \cdot M' \\
 & H_{100}. + x_1 L^{0.16} H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L L + \\
 & I_{1.50262} \cdot \frac{Cm}{Cm} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2^2 \cdot x_5^3 \cdot M' \cdot Hx_4 H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L L - \\
 & I_{4.39791} \cdot \frac{Cm}{Cm} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_2^2 \cdot x_5^3 \cdot M' \\
 & H_{100}. + x_1 L^{0.16} x_4 H_{748369}. + H_{3754.34} - 2514.29 Cb L \cdot x_5 + \\
 & x_1 H_{39178.3} + H_{268.651} + 1. Ntd \cdot x_2 + H - 0.0359016 + 0.331601 Cb L \cdot x_2 \cdot x_3 L \cdot x_5 L L L + \\
 & I_{1149.27} \cdot \frac{Cm}{Cm} \cdot x_1 H_{19.1016} + 1. \cdot x_1 L \cdot x_4 \cdot x_5^3 \cdot M' \cdot H_{100}. + x_1 L^{0.16} H_{748369}. + H_{3754.34} - 2514.29 Cb L
 \end{aligned}$$

$$\begin{aligned}
& x^5 + x^1 \#39178.3 + \#268.651 + 1. \text{Ntd } x^2 + \# - 0.0359016 + 0.331601 \text{ Cbl } x^2 x^3 x^5 \text{LLL} - \\
& 1392.666 \cdot \frac{\text{|||||}}{\text{Cm}} x^1 \#19.1016 + 1. x^1 L x^4 x^5^3 \cdot \#748369. + \#3754.34 - 2514.29 \text{ Cbl } x^5 + \\
& x^1 \#39178.3 + \#268.651 + 1. \text{Ntd } x^2 + \# - 0.0359016 + 0.331601 \text{ Cbl } x^2 x^3 x^5 \text{LL} + \\
& \#248.082 \text{ Cm}^{3^2} x^1 \#19.1016 + 1. x^1 L x^4 x^5^3 \cdot \#748369. + \#3754.34 - 2514.29 \text{ Cbl } x^5 + \\
& x^1 \#39178.3 + \#268.651 + 1. \text{Ntd } x^2 + \# - 0.0359016 + 0.331601 \text{ Cbl } x^2 x^3 x^5 \text{L} - \\
& 1320.374 \cdot \frac{\text{|||||}}{\text{Cm}} \text{ Cw } x^1 \#19.1016 + 1. x^1 L x^4 x^5^3 \cdot \#748369. + \#3754.34 - 2514.29 \text{ Cbl } x^5 + \\
& x^1 \#39178.3 + \#268.651 + 1. \text{Ntd } x^2 + \# - 0.0359016 + 0.331601 \text{ Cbl } x^2 x^3 x^5 \text{LL} - \\
& \#726.093 \text{ Cm}^{3^2} x^1 \#19.1016 + 1. x^1 L x^4 x^5^3 \cdot \#748369. + \#3754.34 - 2514.29 \text{ Cbl} \\
& x^5 + x^1 \#39178.3 + \#268.651 + 1. \text{Ntd } x^2 + \# - 0.0359016 + 0.331601 \text{ Cbl } x^2 x^3 x^5 \text{LLL} + \\
& 1937.68 \cdot \frac{\text{|||||}}{\text{Cm}} \text{ Cw } x^1 \#19.1016 + 1. x^1 L x^4 x^5^3 \cdot \#748369. + \#3754.34 - 2514.29 \text{ Cbl } x^5 + \\
& \#1100. + x^1 L^{0.16} \#748369. + \#3754.34 - 2514.29 \text{ Cbl } x^5 + \\
& x^1 \#39178.3 + \#268.651 + 1. \text{Ntd } x^2 + \# - 0.0359016 + 0.331601 \text{ Cbl } x^2 x^3 x^5 \text{LLL} -
\end{aligned}$$

$$\begin{aligned}
& \left. \begin{array}{l} 8.40505 \cdot 10^{13} \text{ AT } c^{7^{3.78613}} \text{ Cb } \tilde{a} \wedge - 1.41435 \$ \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x^4} - \\ \frac{5.08183 c^{16}}{x^1} - \frac{24.3584 x^2}{x^1} + \frac{0.0713525 x^1}{x^4} - \frac{8.90612 \text{ Cb } x^2 x^4}{\text{HCb } x^1 x^2 x^4 L^{0.666667}} + \\ 0. \tilde{a} \frac{-13.0532}{x^1} \text{ CosB } \frac{-13.3425 + 53.5923 \text{ Cp}}{x^1} x^1 \#19.1016 + 1. x^1 L J \frac{x^4}{x^2} x^5 \end{array} \right\}
\end{aligned}$$

$$\begin{aligned}
& \#1100. - \text{hal}^{1.37565} \#2.25684 \cdot 10^6 + \#11321.9 - 7582.29 \text{ Cbl } x^5 + \\
& x^1 \#118149. + \#810.165 + 3.01567 \text{ Ntd } x^2 + \# - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{LLL} +
\end{aligned}$$

$$\begin{aligned}
& \left. \begin{array}{l} 1.05063 \cdot 10^{14} c^{7^{3.78613}} \text{ Cb } \tilde{a} \wedge - 1.41435 \$ \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x^4} - \frac{5.08183 c^{16}}{x^1} - \\ \frac{24.3584 x^2}{x^1} + \frac{0.0713525 x^1}{x^4} - \frac{8.90612 \text{ Cb } x^2 x^4}{\text{HCb } x^1 x^2 x^4 L^{0.666667}} + 0. \tilde{a} \frac{-13.0532}{x^1} \\ \text{CosB } \frac{-13.3425 + 53.5923 \text{ Cp}}{x^1} x^1 \#19.1016 + 1. x^1 L x^2 x^4 J \frac{x^4}{x^2} x^5 \end{array} \right\}
\end{aligned}$$

$$\begin{aligned}
& \#1100. - \text{hal}^{1.37565} \#2.25684 \cdot 10^6 + \#11321.9 - 7582.29 \text{ Cbl } x^5 + \\
& x^1 \#118149. + \#810.165 + 3.01567 \text{ Ntd } x^2 + \# - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{LLL} - \\
& \#3110.69 \text{ ABT } \#19.1016 + 1. x^1 L x^5^3 \cdot \#748369. + \#3754.34 - 2514.29 \text{ Cbl } x^5 + \\
& x^1 \#118149. + \#810.165 + 3.01567 \text{ Ntd } x^2 + \# - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{LLL} +
\end{aligned}$$

$$\left. \begin{array}{l} 66.4896 \text{ ABT } \text{Cb}^3 \cdot \tilde{a} \frac{-1.41435 \$ \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x^4}}{\cdot \frac{\text{|||||}}{x^1} \#19.1016 + 1. x^1 L x^5^3} \end{array} \right\}$$

$$\begin{aligned}
& \#2.25684 \cdot 10^6 + \#11321.9 - 7582.29 \text{ Cbl } x^5 + \\
& x^1 \#118149. + \#810.165 + 3.01567 \text{ Ntd } x^2 + \# - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{LL} -
\end{aligned}$$

$$\left. \begin{array}{l} 1662.24 \text{ ABT } c^4 \text{Cb}^3 \cdot \tilde{a} \frac{-1.41435 \$ \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x^4}}{\cdot \frac{\text{|||||}}{x^1} \#19.1016 + 1. x^1 L x^5^3} \end{array} \right\}$$

$$\#2.25684 \cdot 10^6 + \#11321.9 - 7582.29 \text{ Cbl } x^5 +$$

$$\begin{aligned}
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL + \\
& \text{H}9104.46 \text{ABT} \text{H}19.1016 + 1. x1L x5^3 L \cdot \\
& \text{H}2.25684 \text{C}b^4 + x1L^{0.16} \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LLL - \\
& 1578.353 \text{Cb}^4 \cdot \text{C}m^4 \cdot x1 \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$12.4617 \text{Cb}^4 \cdot \text{C}m^4 \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$311.541 c4 \text{Cb}^4 \cdot \text{C}m^4 \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$12.362 \text{Cb}^5 \cdot \text{C}m^4 \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$309.051 c4 \text{Cb}^5 \cdot \text{C}m^4 \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$7.99551 \text{Cb}^4 \cdot \text{C}m^{3 \cdot 2} \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$199.888 c4 \text{Cb}^4 \cdot \text{C}m^{3 \cdot 2} \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$10.3254 \text{Cb}^4 \cdot \text{C}m^4 \cdot \text{C}w \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$258.136 c4 \text{Cb}^4 \cdot \text{C}m^4 \cdot \text{C}w \cdot \overset{-1.41435 \$}{\text{AP}1.5} \overset{-\text{hb}+x4+}{\text{ABT} x2x4} x1^{3 \cdot 2} \text{H}19.1016 + 1. x1L x2 x5^3 \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$\begin{aligned}
& \text{H}2.25684 \text{H}11321.9 - 7582.29 \text{Cbl} x5 +
\end{aligned}$$

$$\begin{aligned}
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL + \\
& 11692.74 \text{Cb}^4 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} x1 \text{H}19.1016 + 1. x1L x2 x5^3 \text{M}' \\
& \text{H}100. + x1L^{0.16} \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LLL -
\end{aligned}$$

$$\left. \begin{aligned}
& 0.0968568 \text{Cb}^4 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x2^2 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}x4 \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LLL +
\end{aligned}$$

$$\left. \begin{aligned}
& 2.42142 \text{c}4 \text{Cb}^4 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x2^2 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}x4 \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LLL - \\
& 11156.71 \text{Cb}^4 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} x1 \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$\left. \begin{aligned}
& 25.3107 \text{Cb}^4 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$\left. \begin{aligned}
& 632.768 \text{c}4 \text{Cb}^4 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$\left. \begin{aligned}
& 24.7241 \text{Cb}^5 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$\left. \begin{aligned}
& 618.101 \text{c}4 \text{Cb}^5 \cdot \frac{\text{Cm}^{\text{|||||}}}{\text{Cm}^{\text{|||||}}} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL -
\end{aligned}$$

$$\left. \begin{aligned}
& 15.991 \text{Cb}^4 \cdot \text{Cm}^{3*2} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL +
\end{aligned}$$

$$\left. \begin{aligned}
& 399.775 \text{c}4 \text{Cb}^4 \cdot \text{Cm}^{3*2} \bar{a}^{-1.41435} \$ \frac{\text{Apr}1.5}{-\text{hb}+x4+ \text{ABT} x2x4} x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3 \text{M}' \end{aligned} \right\}$$

$$\begin{aligned}
& \text{H}2.25684 \text{ } \hat{\sim} 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 +
\end{aligned}$$

$$\begin{aligned}
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL + \\
& 20.6509 \text{Cb}^4. \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3} \cdot \\
& \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL - \\
& 516.272 c4 \text{Cb}^4. \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3} \cdot \\
& \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL + \\
& 13385.48 \text{Cb} \cdot \frac{\text{ABT}^{1.5}}{\text{Cm}} x1 \text{H}19.1016 + 1. x1L x4 x5^3 \cdot \\
& \text{H}100. + x1L^{0.16} \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 + \\
& x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LLL + \\
& 886746. \text{ABT}^{1.5} \bar{a} \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x5} \\
& -2.45175 \text{ABT} - 9.807 \text{hb} + 9.807 x4 + 0.0396911 x5^2 \\
& \text{H}748369. + \text{H}3754.34 - 2514.29 \text{Cbl} x5 + \\
& x1 \text{H}39178.3 + \text{H}268.651 + 1. \text{Ntd} x2 + \text{H}-0.0359016 + 0.331601 \text{Cbl} x2 x3L x5LL \\
& 3.77918 + 1. \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3} \cdot \\
& 22902.9 \cdot 2.26041 \text{H}x1 x2 x3L^{0.166667} + 0.537397 x5 - \frac{\text{ABT}^{1.5}}{\text{Cm} \text{H}90. - \text{hal}^{1.37585}} \cdot 1.78933 \cdot 10^{10} \\
& c7^{3.78613} \text{Cb} \bar{a} \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3} \cdot 0.0713525 x1^2 - 5.08183 c16 x1 x4 - \\
& 24.3584 x2 x4 - 8.90612 x4 \text{H}Cb x1 x2 x4L^{0.333333} - \\
& 1.41435 x1 x4 \$ \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3} \cdot \frac{x5}{x1} \cdot 0.9 \\
& 0. \bar{a} \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \text{Cw} \bar{a}^{-1.41435} \$ \frac{-\text{hb}+x4+ \text{ABT} x2 x4}}{x1^{3*2} \text{H}19.1016 + 1. x1L x4 x5^3} \cdot \frac{-13.3425 + 53.5923 \text{Cb}}{\text{Cm}} x1 \\
& \frac{x4}{x2} \cdot 1.07961 \text{H}1. \text{AT} - 1.25 \text{Cm} x2 x4L + 135.73 \text{AT} c6
\end{aligned}$$

$$x^5 + 135.73 - 0.00205 - 0.00109545 H - 0.04 + 1. c4L Cb^4$$

$$\bar{a}^{-1.41435} \left(\frac{ABT^{1.5}}{-hb+x^4 + ABT x^2 x^4} \right) \cdot \frac{1}{x^1} + \frac{0.006}{H100. + x1L^{0.16}}$$

$$J \frac{2.38 ABT}{Cb} + C_m x1 J0.453 + 0.4425 Cb - 0.2862 C_m + 0.3696 C_w -$$

$$\frac{0.003467 x^2}{x^4} Hx^2 + 2. x4LN x5^2 + 569.292 ABT^{1.5} \bar{a}^{-0.56632} \left(\frac{ABT}{-1.5hb+x^4} \right)$$

$$-2.45175 ABT - 9.807 hb + 9.807 x^4 + 0.0396911 x5^2$$

$$3.77918 + 1.$$

$$-2.45175 ABT - 9.807 hb + 9.807 x^4 + 0.0396911 x5^2$$

$$10.1798 + 0.93 + \frac{H1. - Cpl^{0.60247}}{k} 0.487118 H1. + 0.011 Csternl$$

$$1. - Cp + \frac{0.121563}{-1.4 Cp} J \frac{x^2}{x1} \frac{1.06806}{Cb x^2 x^4} \frac{0.36486}{x1^2}$$

$$J \frac{x^4}{x1} \frac{0.46106 W}{x1} \frac{2.38 ABT}{Cb} + C_m x1 J0.453 + 0.4425 Cb -$$

$$0.2862 C_m + 0.3696 C_w - \frac{0.003467 x^2}{x^4} Hx^2 + 2. x4LN x5^2$$

$$H3.63637 + 0.434294 \text{Log} x1 x5DL^2 \wedge 0.2 \wedge 0.56 +$$

$$45187.7 + 2.26041 Hx1 x2 x3L^{0.166667} + 0.537397 x5 - \frac{Cm H90. - hal^{1.37565}}{k} 1.78933 \cdot 10^{10}$$

$$c^{73.78613} Cb \bar{a} \left(\frac{1}{x1 x^4} \right)^{0.9} \frac{0.0713525 x1^2 - 5.08183 c16 x1 x^4 -$$

$$24.3584 x2 x^4 - 8.90612 x^4 H Cb x1 x2 x4L^{0.333333} -$$

$$1.41435 x1 x^4 \left(\frac{ABT^{1.5}}{-hb + x^4 + ABT x^2 x^4} \right) \frac{x5}{x1} \frac{0.9 y}{k}$$

$$\begin{aligned}
& 0. \bar{a} \left\{ \frac{-1.41435 \text{ ABT}^{1.5}}{-hb \times x^4 + \text{ABT}^2 \times x^4} \right\} \cdot \left\{ \frac{0.006}{100. + x^2} \right\}^{0.16} x^1 \\
& \frac{J \left\{ \frac{x^4}{x^2} \right\}^{1.07961}}{x^2} \text{H1. AT} - 1.25 \text{ Cm} \times 2 \times 4 \left\{ \frac{y}{x} \right\} + 135.73 \text{ AT} c_6 \\
& x^5 \left\{ \frac{y}{x} \right\}^2 + 135.73 \left\{ \frac{y}{x} \right\} - 0.00205 - 0.00109545 \text{H} - 0.04 + 1. c_4 \text{ Cb}^4. \\
& \bar{a} \left\{ \frac{-1.41435 \text{ ABT}^{1.5}}{-hb \times x^4 + \text{ABT}^2 \times x^4} \right\} \cdot \left\{ \frac{0.006}{100. + x^2} \right\}^{0.16} x^1 + \left\{ \frac{0.003467 \times 2}{x^4} \right\} \text{H} \times 2 + 2. \times 4 \text{LN} x^5 \left\{ \frac{y}{x} \right\}^2 + 569.292 \text{ ABT}^{1.5} \bar{a} \left\{ \frac{-0.56633}{-1.5 \text{ hb} \times x^4} \right\} \\
& \frac{2.38 \text{ ABT}}{\text{Cb}} + \left\{ \frac{0.003467 \times 2}{x^4} \right\} \text{Cm} \times 1 \text{J} 0.453 + 0.4425 \text{ Cb} - 0.2862 \text{ Cm} + 0.3696 \text{ Cw} - \\
& \left\{ \frac{0.003467 \times 2}{x^4} \right\} \text{H} \times 2 + 2. \times 4 \text{LN} x^5 \left\{ \frac{y}{x} \right\}^2 + 569.292 \text{ ABT}^{1.5} \bar{a} \left\{ \frac{-0.56633}{-1.5 \text{ hb} \times x^4} \right\} \\
& \left\{ \frac{y}{x} \right\}^3 - 2.45175 \text{ ABT} - 9.807 \text{ hb} + 9.807 x^4 + 0.0396911 x^5 \left\{ \frac{y}{x} \right\}^3 \\
& \left\{ \frac{y}{x} \right\}^3 3.77918 + 1. \\
& \left\{ \frac{y}{x} \right\}^3 - 2.45175 \text{ ABT} - 9.807 \text{ hb} + 9.807 x^4 + 0.0396911 x^5 \left\{ \frac{y}{x} \right\}^3 + \\
& \left\{ \frac{y}{x} \right\}^3 10.1798 \left\{ \frac{y}{x} \right\}^3 + 0.93 + \left\{ \frac{0.487118 \text{H1.} + 0.011 \text{CsternL}}{\text{H1.} - \text{CpL}} \right\}^{0.50247} \\
& \left\{ \frac{y}{x} \right\}^3 1. - \text{Cp} + \left\{ \frac{0.121563}{-1.74 \cdot \text{Cp}} \right\} \left\{ \frac{y}{x} \right\}^2 \frac{1.06806}{x^1} \left\{ \frac{y}{x} \right\}^2 \frac{0.36486}{\text{Cb} \times 2 \times 4} \\
& \frac{J \left\{ \frac{x^4}{x^1} \right\}^{0.46106}}{x^1} \frac{2.38 \text{ ABT}}{\text{Cb}} + \left\{ \frac{0.003467 \times 2}{x^4} \right\} \text{Cm} \times 1 \text{J} 0.453 + 0.4425 \text{ Cb} - \\
& 0.2862 \text{ Cm} + 0.3696 \text{ Cw} - \left\{ \frac{0.003467 \times 2}{x^4} \right\} \text{H} \times 2 + 2. \times 4 \text{LN} x^5 \left\{ \frac{y}{x} \right\}^2 \\
& \text{H} 3.63637 + 0.434294 \text{Log} \left\{ \frac{y}{x} \right\} \times 1 x^5 \text{DL}^2 \left\{ \frac{y}{x} \right\}^{0.2} \left\{ \frac{y}{x} \right\}^{0.8} + \\
& 907.529 \left\{ \frac{y}{x} \right\}^5 - \left\{ \frac{1.78933 \times 10^{10} c^{7.78613}}{\text{Cm} \text{H} 90. - \text{hal}^{1.37565}} \right\} \text{Cb} \bar{a}^{\wedge}
\end{aligned}$$

$$\begin{aligned}
& 0.0713525 x1^2 - 5.08183 c16 x1 x4 - 24.3584 x2 x4 - \\
& 8.90612 x4 HcB x1 x2 x4L^{0.333333} - 1.41435 x1 x4 \\
& \$ \frac{ABT^{1.5}}{-hb + x4 + \frac{ABT}{x2 x4}} \cdot \frac{x5}{x1} \cdot \frac{0.9V}{x1} + 0. \bar{a} \cdot \frac{13.0853}{x1} \cdot \text{Cos}\beta \\
& \frac{-13.3425 + 53.5923 Cp}{x1} \cdot \frac{x4}{x2} \cdot \frac{1.07961}{x1} \cdot H1. AT - 1.25 Cm x2 x4L + \\
& 135.73 AT c6 x5^2 + 135.73 \cdot \frac{1}{x1} \cdot \frac{1}{x1} - 0.00205 - 0.00109545 H - 0.04 + 1. c4L \\
& Cb^4. \bar{a}^{-1.41435} \cdot \frac{ABT^{1.5}}{-hb+x4+ \frac{ABT}{x2x4}} \cdot \frac{1}{x1} + \frac{0.006}{H100. + x1L^{0.16}} \\
& \frac{2.38 ABT}{Cb} + \frac{1}{Cm} x1 J0.453 + 0.4425 Cb - 0.2862 Cm + 0.3696 Cw - \\
& \frac{0.003467 x2}{x4} Hx2 + 2. x4LN x5^2 + \frac{569.292 ABT^{1.5} \bar{a}}{1.5 hb x4} \\
& \frac{x5}{-2.45175 ABT - 9.807 hb + 9.807 x4 + 0.0396911 x5^2} \cdot \frac{V^3}{x1} \\
& 3.77918 + 1. \cdot \frac{x5}{-2.45175 ABT - 9.807 hb + 9.807 x4 + 0.0396911 x5^2} \cdot \frac{V^2}{x1} + \\
& 10.1798 \cdot 0.93 + \frac{H1. - Cpl^{0.60247}}{x1} \cdot 0.487118 H1. + 0.011 CsternL \\
& \frac{1. - Cp + \frac{0.121563}{-1.74 Cp}}{x1} \cdot \frac{J x2}{x1} \cdot \frac{1.06806}{x1} \\
& \frac{C_b x2 x4}{x1^2} \cdot \frac{0.36486}{x1} \cdot \frac{0.46106V}{x1} \cdot \frac{2.38 ABT}{Cb} + \\
& \cdot \frac{1}{Cm} x1 J0.453 + 0.4425 Cb - 0.2862 Cm + 0.3696 Cw - \frac{0.003467 x2}{x4} \\
& Hx2 + 2. x4LN x5^2 \cdot \frac{V}{x1} \cdot H3.63637 + 0.434294 \text{Log}x1 x5DL^2 \cdot \frac{V^2}{x1} \cdot 0.2 + \\
& 12.2614 x5^3 - \frac{Cm H90. - hal^{1.37565}}{x1} \cdot 1.78933 \cdot 10^{10} c7^{3.78613} Cb \bar{a}^{\wedge}
\end{aligned}$$

$$\begin{aligned}
& 0.0713525 x1^2 - 5.08183 c16 x1 x4 - 24.3584 x2 x4 - \\
& 8.90612 x4 HcB x1 x2 x4L^{0.333333} - 1.41435 x1 x4 \\
& \frac{ABT^{1.5}}{-hb + x4 + ABT x2 x4} \left\{ \frac{x5}{x1} \right\}^{0.9} + 0. \bar{a} \left\{ \frac{-13.3425}{x1} \right\} \cos\beta \\
& \frac{-13.3425 + 53.5923 Cp}{x1} \left\{ \frac{x4}{x2} \right\}^{1.07961} H1. AT - 1.25 Cm x2 x4L + \\
& 135.73 AT c6 x5^2 + 135.73 \left\{ \frac{-0.00205 - 0.00109545 H - 0.04 + 1. c4L}{k} \right\} \\
& Cb^4. \bar{a}^{-1.41435} \frac{ABT^{1.5}}{-hb+x4+ABT x2x4} \cdot \frac{0.006}{H100. + x1L^{0.16}} \\
& \frac{2.38 ABT}{Cb} + \frac{Cm}{x1} J0.453 + 0.4425 Cb - 0.2862 Cm + 0.3696 Cw - \\
& \frac{0.003467 x2}{x4} Hx2 + 2. x4LN x5^2 + \frac{569.292 ABT^{1.5} \bar{a}}{x1} \left\{ \frac{-0.56633}{-1.5 hb + x4} \right\} \\
& \frac{x5}{-2.45175 ABT - 9.807 hb + 9.807 x4 + 0.0396911 x5^2} \left\{ \frac{V^3}{z} \right\} \\
& 3.77918 + 1. \frac{x5}{-2.45175 ABT - 9.807 hb + 9.807 x4 + 0.0396911 x5^2} \left\{ \frac{V^2}{z} \right\} + \\
& 10.1798 \left\{ \frac{0.93 + H1. - Cpl^{0.60247}}{k} \right\} 0.487118 H1. + 0.011 Csternl \\
& \frac{1. - Cp + \frac{0.121563}{-1.74 Cp}}{k} \left\{ \frac{J x2}{x1} \right\}^{1.06806} \\
& \frac{Cm x1^2}{Cb x2 x4} \left\{ \frac{0.36486}{x1} \right\} \frac{0.46106 V}{z} \left\{ \frac{2.38 ABT}{Cb} + \right. \\
& \left. \frac{Cm}{x1} J0.453 + 0.4425 Cb - 0.2862 Cm + 0.3696 Cw - \frac{0.003467 x2}{x4} \right. \\
& \left. Hx2 + 2. x4LN x5^2 \right\} H3.63637 + 0.434294 \text{Log}x1 x5DL^2 \wedge 0.6 + \\
& 16577.86 \cdot \frac{Cm}{x1} H19.1016 + 1. x1L x2 x5^3 \cdot M' HH748369. + H3754.34 - 2514.29 Cbl x5 + \\
& x1 H39178.3 + H268.651 + 1. Ntd x2 + H- 0.0359016 + 0.331601 Cbl x2 x3L x5LL \\
& H3.63637 + 0.434294 \text{Log}x1 x5DL^2 \cdot L - \\
& H4220.42 Cm^{3.2} x1 H19.1016 + 1. x1L x2 x5^3 \cdot L \cdot HH748369. + H3754.34 - 2514.29 Cbl x5 + \\
& x1 H39178.3 + H268.651 + 1. Ntd x2 + H- 0.0359016 + 0.331601 Cbl x2 x3L x5LL
\end{aligned}$$

$$\begin{aligned}
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L + \\
& I5450.27 \cdot \frac{H19.1016 + 1. x 1L x 2 x 5^3 \cdot M'}{Cm} Cw x 1 H19.1016 + 1. x 1L x 2 x 5^3 \cdot M' \\
& HH748369. + H3754.34 - 2514.29 Cbl x 5 + \\
& \quad x 1 H39178.3 + H268.651 + 1. Ntd x 2 + H-0.0359016 + 0.331601 Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L - \\
& I51.1257 \cdot \frac{H19.1016 + 1. x 1L x 2^2 x 5^3 \cdot M'}{Cm} x 1 H19.1016 + 1. x 1L x 2^2 x 5^3 \cdot M' \\
& Hx4 H748369. + H3754.34 - 2514.29 Cbl x 5 + \\
& \quad x 1 H39178.3 + H268.651 + 1. Ntd x 2 + H-0.0359016 + 0.331601 Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L + \\
& I13360.2 \cdot \frac{H19.1016 + 1. x 1L x 4 x 5^3 \cdot M'}{Cm} x 1 H19.1016 + 1. x 1L x 4 x 5^3 \cdot M' \\
& HH748369. + H3754.34 - 2514.29 Cbl x 5 + \\
& \quad x 1 H39178.3 + H268.651 + 1. Ntd x 2 + H-0.0359016 + 0.331601 Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L - \\
& H8440.83 Cm^{3 \cdot 2} x 1 H19.1016 + 1. x 1L x 4 x 5^3 \cdot L \cdot HH748369. + H3754.34 - 2514.29 Cbl x 5 + \\
& \quad x 1 H39178.3 + H268.651 + 1. Ntd x 2 + H-0.0359016 + 0.331601 Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L + \\
& I10900.5 \cdot \frac{H19.1016 + 1. x 1L x 4 x 5^3 \cdot M'}{Cm} Cw x 1 H19.1016 + 1. x 1L x 4 x 5^3 \cdot M' \\
& HH748369. + H3754.34 - 2514.29 Cbl x 5 + \\
& \quad x 1 H39178.3 + H268.651 + 1. Ntd x 2 + H-0.0359016 + 0.331601 Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L + H105839. ABT H19.1016 + 1. x 1L x 5^3 \cdot L \cdot \\
& HCb H2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x 5 + \\
& \quad x 1 H118149. + H810.165 + 3.01567 Ntd x 2 + H-0.108267 + 1. Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L + \\
& I19678.1 Cb \cdot \frac{H19.1016 + 1. x 1L x 2 x 5^3 \cdot M'}{Cm} x 1 H19.1016 + 1. x 1L x 2 x 5^3 \cdot M' \\
& HH2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x 5 + \\
& \quad x 1 H118149. + H810.165 + 3.01567 Ntd x 2 + H-0.108267 + 1. Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L + \\
& I39356.2 Cb \cdot \frac{H19.1016 + 1. x 1L x 4 x 5^3 \cdot M'}{Cm} x 1 H19.1016 + 1. x 1L x 4 x 5^3 \cdot M' \\
& HH2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x 5 + \\
& \quad x 1 H118149. + H810.165 + 3.01567 Ntd x 2 + H-0.108267 + 1. Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L +
\end{aligned}$$

$$\begin{aligned}
& I55436.8 ABT H19.1016 + 1. x 1L \cdot \left\{ \frac{1. - Cp + \frac{0.121563}{x^2} \cdot \frac{1.06806}{x}}{-1.74 \cdot Cp} \right\}
\end{aligned}$$

$$\begin{aligned}
& \left\{ \frac{0.36486}{x^2} \cdot \frac{0.46106}{x^4} \cdot x 5^3 \cdot M' \right\}
\end{aligned}$$

$$\begin{aligned}
& HCb H1. - Cpl^{0.60247} H2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x 5 + \\
& \quad x 1 H118149. + H810.165 + 3.01567 Ntd x 2 + H-0.108267 + 1. Cbl x 2 x 3L x 5LL \\
& H3.63637 + 0.434294 \operatorname{Log} x \cdot 1 x 50L^2 \cdot L +
\end{aligned}$$

$$\begin{aligned}
& I609.805 ABT Cstern H19.1016 + 1. x 1L \cdot \left\{ \frac{1. - Cp + \frac{0.121563}{x^2}}{-1.74 \cdot Cp} \right\}
\end{aligned}$$

$$\begin{aligned}
& \left\{ \frac{1.06806}{x^2} \cdot \frac{0.36486}{x^2} \cdot \frac{0.46106}{x^4} \cdot x 5^3 \cdot M' \right\}
\end{aligned}$$

$$\begin{aligned}
& HCb H1. - Cpl^{0.60247} H2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x 5 +
\end{aligned}$$

$$x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL$$

$$\text{H}3.63637 + 0.434294 \text{Log}x1 x5DL^2L +$$

$$10390.1 \cdot \text{Cm} x1 \text{H}19.1016 + 1. x1L \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563} x2$$

$$x2 J \begin{array}{l} x2 \\ x1 \end{array} \begin{array}{l} 1.06806 \\ \\ \end{array} J \begin{array}{l} x1^2. \\ \\ \end{array} \begin{array}{l} 0.36486 \\ \\ \end{array} J \begin{array}{l} x4 \\ x1 \end{array} \begin{array}{l} 0.46106 \\ \\ \end{array} x5^3 \text{ "}$$

$$\text{H}1. - \text{Cpl}^{0.60247} \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL$$

$$\text{H}3.63637 + 0.434294 \text{Log}x1 x5DL^2L +$$

$$10307.1 \text{Cb} \cdot \text{Cm} x1 \text{H}19.1016 + 1. x1L \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563}$$

$$x2 J \begin{array}{l} x2 \\ x1 \end{array} \begin{array}{l} 1.06806 \\ \\ \end{array} J \begin{array}{l} x1^2. \\ \\ \end{array} \begin{array}{l} 0.36486 \\ \\ \end{array} J \begin{array}{l} x4 \\ x1 \end{array} \begin{array}{l} 0.46106 \\ \\ \end{array} x5^3 \text{ "}$$

$$\text{H}1. - \text{Cpl}^{0.60247} \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL$$

$$\text{H}3.63637 + 0.434294 \text{Log}x1 x5DL^2L -$$

$$6666.39 \text{Cm}^{3 \cdot 2} x1 \text{H}19.1016 + 1. x1L \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563} x2$$

$$x2 J \begin{array}{l} x2 \\ x1 \end{array} \begin{array}{l} 1.06806 \\ \\ \end{array} J \begin{array}{l} x1^2. \\ \\ \end{array} \begin{array}{l} 0.36486 \\ \\ \end{array} J \begin{array}{l} x4 \\ x1 \end{array} \begin{array}{l} 0.46106 \\ \\ \end{array} x5^3 \text{ "}$$

$$\text{H}1. - \text{Cpl}^{0.60247} \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL$$

$$\text{H}3.63637 + 0.434294 \text{Log}x1 x5DL^2L +$$

$$114.291 \cdot \text{Cm} \text{Cstern} x1 \text{H}19.1016 + 1. x1L \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563}$$

$$x2 J \begin{array}{l} x2 \\ x1 \end{array} \begin{array}{l} 1.06806 \\ \\ \end{array} J \begin{array}{l} x1^2. \\ \\ \end{array} \begin{array}{l} 0.36486 \\ \\ \end{array} J \begin{array}{l} x4 \\ x1 \end{array} \begin{array}{l} 0.46106 \\ \\ \end{array} x5^3 \text{ "}$$

$$\text{H}1. - \text{Cpl}^{0.60247} \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL$$

$$\text{H}3.63637 + 0.434294 \text{Log}x1 x5DL^2L +$$

$$113.378 \text{Cb} \cdot \text{Cm} \text{Cstern} x1 \text{H}19.1016 + 1. x1L \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563}$$

$$x2 J \begin{array}{l} x2 \\ x1 \end{array} \begin{array}{l} 1.06806 \\ \\ \end{array} J \begin{array}{l} x1^2. \\ \\ \end{array} \begin{array}{l} 0.36486 \\ \\ \end{array} J \begin{array}{l} x4 \\ x1 \end{array} \begin{array}{l} 0.46106 \\ \\ \end{array} x5^3 \text{ "}$$

$$\text{H}1. - \text{Cpl}^{0.60247} \text{H}2.25684 \cdot 10^6 + \text{H}11321.9 - 7582.29 \text{Cbl} x5 +$$

$$x1 \text{H}118149. + \text{H}810.165 + 3.01567 \text{Ntd} x2 + \text{H}-0.108267 + 1. \text{Cbl} x2 x3L x5LL$$

$$\text{H}3.63637 + 0.434294 \text{Log}x1 x5DL^2L -$$

$$73.3303 \text{ Cm}^{3 \cdot 2} \text{ Cstern x1 H19.1016} + 1. \text{ x1L} \left\{ \begin{array}{l} 1. - \text{ Cp} + \\ -1. + 4. \text{ Cp} \end{array} \right\}^{0.121563}$$

$$x2 \text{ J} \left\{ \begin{array}{l} x2 \\ x1 \end{array} \right\}^{1.06806} \text{ J} \left\{ \begin{array}{l} x1^2 \\ \text{Cb x2 x4} \end{array} \right\}^{0.36486} \text{ J} \left\{ \begin{array}{l} x4 \\ x1 \end{array} \right\}^{0.46106} x5^3 \text{ "}$$

$$\text{H1.} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H11321.9} - 7582.29 \text{ Cbl x5} + \\ x1 \text{ H118149.} + \text{H810.165} + 3.01567 \text{ Ntd x2} + \text{H} - 0.108267 + 1. \text{ Cbl x2 x3L x5LL} \\ \text{H3.63637} + 0.434294 \text{ Log@x1 x5DL}^2 \text{L} +$$

$$8609.01 \cdot \text{Cm} \text{ Cw x1 H19.1016} + 1. \text{ x1L} \left\{ \begin{array}{l} 1. - \text{ Cp} + \\ -1. + 4. \text{ Cp} \end{array} \right\}^{0.121563}$$

$$x2 \text{ J} \left\{ \begin{array}{l} x2 \\ x1 \end{array} \right\}^{1.06806} \text{ J} \left\{ \begin{array}{l} x1^2 \\ \text{Cb x2 x4} \end{array} \right\}^{0.36486} \text{ J} \left\{ \begin{array}{l} x4 \\ x1 \end{array} \right\}^{0.46106} x5^3 \text{ "}$$

$$\text{H1.} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H11321.9} - 7582.29 \text{ Cbl x5} + \\ x1 \text{ H118149.} + \text{H810.165} + 3.01567 \text{ Ntd x2} + \text{H} - 0.108267 + 1. \text{ Cbl x2 x3L x5LL} \\ \text{H3.63637} + 0.434294 \text{ Log@x1 x5DL}^2 \text{L} +$$

$$94.6991 \cdot \text{Cm} \text{ Cstern Cw x1 H19.1016} + 1. \text{ x1L} \left\{ \begin{array}{l} 1. - \text{ Cp} + \\ -1. + 4. \text{ Cp} \end{array} \right\}^{0.121563}$$

$$x2 \text{ J} \left\{ \begin{array}{l} x2 \\ x1 \end{array} \right\}^{1.06806} \text{ J} \left\{ \begin{array}{l} x1^2 \\ \text{Cb x2 x4} \end{array} \right\}^{0.36486} \text{ J} \left\{ \begin{array}{l} x4 \\ x1 \end{array} \right\}^{0.46106} x5^3 \text{ "}$$

$$\text{H1.} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H11321.9} - 7582.29 \text{ Cbl x5} + \\ x1 \text{ H118149.} + \text{H810.165} + 3.01567 \text{ Ntd x2} + \text{H} - 0.108267 + 1. \text{ Cbl x2 x3L x5LL} \\ \text{H3.63637} + 0.434294 \text{ Log@x1 x5DL}^2 \text{L} -$$

$$80.7561 \cdot \text{Cm} \text{ H19.1016} + 1. \text{ x1L} \left\{ \begin{array}{l} 1. - \text{ Cp} + \\ -1. + 4. \text{ Cp} \end{array} \right\}^{0.121563} x2^3$$

$$\text{J} \left\{ \begin{array}{l} x2 \\ x1 \end{array} \right\}^{0.06806} \text{ J} \left\{ \begin{array}{l} x1^2 \\ \text{Cb x2 x4} \end{array} \right\}^{0.36486} \text{ J} \left\{ \begin{array}{l} x4 \\ x1 \end{array} \right\}^{0.46106} x5^3 \text{ "}$$

$$\text{H1.} - \text{Cpl}^{0.60247} x4 \text{H2.25684} \cdot 10^6 + \text{H11321.9} - 7582.29 \text{ Cbl x5} + \\ x1 \text{ H118149.} + \text{H810.165} + 3.01567 \text{ Ntd x2} + \text{H} - 0.108267 + 1. \text{ Cbl x2 x3L x5LL} \\ \text{H3.63637} + 0.434294 \text{ Log@x1 x5DL}^2 \text{L} -$$

$$0.888317 \cdot \text{Cm} \text{ Cstern H19.1016} + 1. \text{ x1L} \left\{ \begin{array}{l} 1. - \text{ Cp} + \\ -1. + 4. \text{ Cp} \end{array} \right\}^{0.121563}$$

$$x2^3 \text{ J} \left\{ \begin{array}{l} x2 \\ x1 \end{array} \right\}^{0.06806} \text{ J} \left\{ \begin{array}{l} x1^2 \\ \text{Cb x2 x4} \end{array} \right\}^{0.36486} \text{ J} \left\{ \begin{array}{l} x4 \\ x1 \end{array} \right\}^{0.46106} x5^3 \text{ "}$$

$$\text{H1.} - \text{Cpl}^{0.60247} x4 \text{H2.25684} \cdot 10^6 + \text{H11321.9} - 7582.29 \text{ Cbl x5} + \\ x1 \text{ H118149.} + \text{H810.165} + 3.01567 \text{ Ntd x2} + \text{H} - 0.108267 + 1. \text{ Cbl x2 x3L x5LL} \\ \text{H3.63637} + 0.434294 \text{ Log@x1 x5DL}^2 \text{L} +$$

$$21103.3 \cdot \text{Cm} \text{ x1 H19.1016} + 1. \text{ x1L} \left\{ \begin{array}{l} 1. - \text{ Cp} + \\ -1. + 4. \text{ Cp} \end{array} \right\}^{0.121563}$$

$$\int_0^1 \frac{x^2}{x^2+1} dx \quad \int_0^1 \frac{x^2}{k} dx \quad \int_0^1 \frac{x^2}{Cb x^2 x^4} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx$$

$$\begin{aligned} & \text{H1} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H1} 1321.9 - 7582.29 \text{ Cbl } x^5 + \\ & \quad x^1 \text{H1} 18149. + \text{H810.165} + 3.01567 \text{ Ntd } x^2 + \text{H} - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{L} \\ & \text{H3.63637} + 0.434294 \text{ Log} x^1 x^5 \text{L}^2 \text{L} + \end{aligned}$$

$$20614.1 \text{ Cb} \cdot \text{Cm} x^1 \text{H19.1016} + 1. x^1 \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx$$

$$\int_0^1 \frac{x^2}{x^2+1} dx \quad \int_0^1 \frac{x^2}{k} dx \quad \int_0^1 \frac{x^2}{Cb x^2 x^4} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx$$

$$\begin{aligned} & \text{H1} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H1} 1321.9 - 7582.29 \text{ Cbl } x^5 + \\ & \quad x^1 \text{H1} 18149. + \text{H810.165} + 3.01567 \text{ Ntd } x^2 + \text{H} - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{L} \\ & \text{H3.63637} + 0.434294 \text{ Log} x^1 x^5 \text{L}^2 \text{L} - \end{aligned}$$

$$13332.8 \text{ Cm}^{3^2} x^1 \text{H19.1016} + 1. x^1 \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx$$

$$\int_0^1 \frac{x^2}{x^2+1} dx \quad \int_0^1 \frac{x^2}{k} dx \quad \int_0^1 \frac{x^2}{Cb x^2 x^4} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx$$

$$\begin{aligned} & \text{H1} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H1} 1321.9 - 7582.29 \text{ Cbl } x^5 + \\ & \quad x^1 \text{H1} 18149. + \text{H810.165} + 3.01567 \text{ Ntd } x^2 + \text{H} - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{L} \\ & \text{H3.63637} + 0.434294 \text{ Log} x^1 x^5 \text{L}^2 \text{L} + \end{aligned}$$

$$232.136 \cdot \text{Cm} \text{ Cstern } x^1 \text{H19.1016} + 1. x^1 \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx$$

$$\int_0^1 \frac{x^2}{x^2+1} dx \quad \int_0^1 \frac{x^2}{k} dx \quad \int_0^1 \frac{x^2}{Cb x^2 x^4} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx$$

$$\begin{aligned} & \text{H1} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H1} 1321.9 - 7582.29 \text{ Cbl } x^5 + \\ & \quad x^1 \text{H1} 18149. + \text{H810.165} + 3.01567 \text{ Ntd } x^2 + \text{H} - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{L} \\ & \text{H3.63637} + 0.434294 \text{ Log} x^1 x^5 \text{L}^2 \text{L} + \end{aligned}$$

$$226.755 \text{ Cb} \cdot \text{Cm} \text{ Cstern } x^1 \text{H19.1016} + 1. x^1 \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx$$

$$\int_0^1 \frac{x^2}{x^2+1} dx \quad \int_0^1 \frac{x^2}{k} dx \quad \int_0^1 \frac{x^2}{Cb x^2 x^4} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx$$

$$\begin{aligned} & \text{H1} - \text{Cpl}^{0.60247} \text{H2.25684} \cdot 10^6 + \text{H1} 1321.9 - 7582.29 \text{ Cbl } x^5 + \\ & \quad x^1 \text{H1} 18149. + \text{H810.165} + 3.01567 \text{ Ntd } x^2 + \text{H} - 0.108267 + 1. \text{ Cbl } x^2 x^3 x^5 \text{L} \\ & \text{H3.63637} + 0.434294 \text{ Log} x^1 x^5 \text{L}^2 \text{L} - \end{aligned}$$

$$146.661 \text{ Cm}^{3^2} \text{ Cstern } x^1 \text{H19.1016} + 1. x^1 \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx \quad \int_0^1 \frac{x^4}{k} dx$$

$$\int_0^1 \frac{x^2}{x^2+1} dx \quad \int_0^1 \frac{x^2}{k} dx \quad \int_0^1 \frac{x^2}{Cb x^2 x^4} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx \quad \int_0^1 \frac{x^4}{x^4+1} dx$$

$$\begin{aligned} &H1. - Cpl^{0.60247} H2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x5 + \\ & \quad x1 H118149. + H810.165 + 3.01567 Ntd x2 + H-0.108267 + 1. Cbl x2 x3L x5LL \\ & H3.63637 + 0.434294 \text{Log}x1 x5DL^2L + \end{aligned}$$

$$17218. \cdot \begin{matrix} \text{|||||} \\ \text{Cm} \end{matrix} Cw x1 H19.1016 + 1. x1L \begin{matrix} \text{|||||} \\ \text{1. - Cp +} \\ \text{-1.+4. Cp} \end{matrix} \left. \vphantom{\begin{matrix} \text{|||||} \\ \text{Cm} \end{matrix}} \right\}^{0.121563}$$

$$\begin{matrix} \text{J} \\ \text{x1} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x2} \\ \text{1.06806} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x1} \\ \text{2.} \\ \text{0.36486} \end{matrix} \begin{matrix} \text{|||||} \\ \text{Cb x2 x4} \\ \{ \end{matrix} \quad x4 \begin{matrix} \text{|||||} \\ \text{J} \\ \text{x1} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x4} \\ \text{0.46106} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x5} \\ \text{3.} \\ \text{''} \end{matrix}$$

$$\begin{aligned} &H1. - Cpl^{0.60247} H2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x5 + \\ & \quad x1 H118149. + H810.165 + 3.01567 Ntd x2 + H-0.108267 + 1. Cbl x2 x3L x5LL \\ & H3.63637 + 0.434294 \text{Log}x1 x5DL^2L + \end{aligned}$$

$$189.398 \cdot \begin{matrix} \text{|||||} \\ \text{Cm} \end{matrix} Cstern Cw x1 H19.1016 + 1. x1L \begin{matrix} \text{|||||} \\ \text{1. - Cp +} \\ \text{-1.+4. Cp} \end{matrix} \left. \vphantom{\begin{matrix} \text{|||||} \\ \text{Cm} \end{matrix}} \right\}^{0.121563}$$

$$\begin{matrix} \text{J} \\ \text{x1} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x2} \\ \text{1.06806} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x1} \\ \text{2.} \\ \text{0.36486} \end{matrix} \begin{matrix} \text{|||||} \\ \text{Cb x2 x4} \\ \{ \end{matrix} \quad x4 \begin{matrix} \text{|||||} \\ \text{J} \\ \text{x1} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x4} \\ \text{0.46106} \end{matrix} \begin{matrix} \text{|||||} \\ \text{x5} \\ \text{3.} \\ \text{''} \end{matrix}$$

$$\begin{aligned} &H1. - Cpl^{0.60247} H2.25684 \cdot 10^6 + H11321.9 - 7582.29 Cbl x5 + \\ & \quad x1 H118149. + H810.165 + 3.01567 Ntd x2 + H-0.108267 + 1. Cbl x2 x3L x5LL \end{aligned}$$

$$H3.63637 + 0.434294 \text{Log}x1 x5DL^2L \left. \vphantom{\text{Log}x1 x5DL^2L} \right\}''$$

$$\begin{aligned} &H- 828.33 + 0.601404 Ntd x1 x2 - 0.0215914 \\ & \quad x1 \\ & \quad x2 \\ & \quad x3 + \\ & Cb \\ & H- 1512.11 + \\ & \quad 0.199426 x1 x2 x3LL \end{aligned}$$

Appendix B

Mathematical Form of the Displacement Weight Equality Constraint

$$WT - Displ = 0$$

where

$$WT - Displ =$$

$$40896.14657063999 - 1512.1065349199998 Cb + 0.6383652303382383 Hx1 x2 x3L^{0.724} + 0.058766414854051534 Hx1 x2 x3L^{1.003} + 0.029108180605508804 Cb Hx1 x2 x3L^{1.003} + 0.00005453523298455982 J - 8.3 + \frac{x1^{1.691}}{x3} Hx1 x2 x3L^{1.003} + 0.000027012391601912168$$

$$Cb J - 8.3 + \frac{x1^{1.691}}{x3} Hx1 x2 x3L^{1.003} + 0.0562114015963442 AT c6 x5^{2.} -$$

$$\frac{0.00027425542838856333 ABT x5^{2.}}{Cb} + \frac{0.0008026988147957951 ABT x5^{2.}}{Cb H100. + x1L^{0.16}} +$$

$$\cdot \frac{5.862083303284248 \cdot 10^{-6} ABT Cb^3 \cdot \bar{a}}{x1} - \frac{1.41434649220055 \cdot 10^{-5} \cdot \frac{ABT^5}{-hb+x4+ ABT x2x4}}{x5^{2.}} -$$

$$0.0001465520825821062 ABT c4 Cb^3 \cdot \bar{a} - \frac{1.41434649220055 \cdot 10^{-5} \cdot \frac{ABT^5}{-hb+x4+ ABT x2x4}}{x5^{2.}} +$$

$$\frac{0.23576661625228706 ABT^{1.5} \bar{a}}{x1} - \frac{0.5662265306122141 \cdot \frac{ABT^5}{-1.5 \cdot hb+x4}}{x5^{2.}}$$

$$\frac{-2.45175 ABT - 9.807 hb + 9.807 x4 + 0.03969110399999999 x5^2}{x1} +$$

$$3. \cdot \frac{13.779184373405185}{x1} +$$

$$1. \cdot \frac{1x5' |' | - 2.45175 \cdot \frac{ABT - 9.807 hb + 9.807 x4 + 0.03969110399999999 x5^2}{x1}}{x1} +$$

$$x1^{3 \cdot 2} \frac{x2^2}{x4} - 8.539429753145583 \cdot 10^{-9} Cb^4 \cdot \frac{Cm \bar{a}}{x1} - \frac{1.41434649220055 \cdot 10^{-5} \cdot \frac{ABT^5}{-hb+x4+ ABT x2x4}}{x5^{2.}} +$$

$$2.1348574382863958 \cdot 10^{-7} c4 Cb^4 \cdot \frac{Cm \bar{a}}{x1} - \frac{1.41434649220055 \cdot 10^{-5} \cdot \frac{ABT^5}{-hb+x4+ ABT x2x4}}{x5^{2.}} +$$

$$x4 \frac{2.2315325515863566 \cdot 10^{-6} Cb^4 \cdot \frac{Cm \bar{a}}{x1}}{x1} - \frac{1.41434649220055 \cdot 10^{-5} \cdot \frac{ABT^5}{-hb+x4+ ABT x2x4}}{x5^{2.}} -$$

$$\begin{aligned}
& 0.00005578831378965892^{\cdot} c4 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\
& 2.1798082871456134^{\cdot} *^{\wedge}-6 Cb^{5^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\
& 0.000054495207178640325^{\cdot} c4 Cb^{5^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\
& 1.4098556650419765^{\cdot} *^{\wedge}-6 Cb^{4^{\cdot}} C m^{3^{\cdot} 2} \bar{a} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\
& 0.00003524639162604941^{\cdot} c4 Cb^{4^{\cdot}} C m^{3^{\cdot} 2} \bar{a} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\
& 1.8206941083141666^{\cdot} *^{\wedge}-6 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\
& 0.00004551735270785416^{\cdot} c4 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\
& x2 \left| \begin{array}{l} 1.0986874162868874^{\cdot} *^{\wedge}-6 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\ \hline 0.00002746718540717218^{\cdot} c4 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\ 1.0899041435728067^{\cdot} *^{\wedge}-6 Cb^{5^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\ 0.000027247603589320162^{\cdot} c4 Cb^{5^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\ 7.049278325209882^{\cdot} *^{\wedge}-7 Cb^{4^{\cdot}} C m^{3^{\cdot} 2} \bar{a} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\ 0.000017623195813024704^{\cdot} c4 Cb^{4^{\cdot}} C m^{3^{\cdot} 2} \bar{a} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \\ 9.103470541570833^{\cdot} *^{\wedge}-7 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} - \\ 0.00002275867635392708^{\cdot} c4 Cb^{4^{\cdot}} \cdot \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} x5^{2^{\cdot}} + \end{array} \right.
\end{aligned}$$

$$x1 \left| \begin{array}{l} \hline 7.4103484154325^{\cdot} *^{\wedge}6 AT c7^{3.78613^{\cdot}} Cb \\ \hline \end{array} \right.$$

$$\bar{a}^{\wedge} - 1.41434649220055^{\cdot} \& \frac{\text{ABT}^{1.5}}{-hb+x4+ \text{ABT}^2 x4} +$$

$$\left| \begin{array}{l} \hline 5.081833302662383^{\cdot} \left| \begin{array}{l} \hline -c16 - \frac{4.79323^{\cdot} x2}{x1} + \frac{0.0140407^{\cdot} x1}{x4} - \\ \hline \end{array} \right. \\ \hline \end{array} \right.$$

$$\frac{1.75254^{\cdot} Cb x2 x4}{HCb x1 x2 x4} + 0. \bar{a} \left| \begin{array}{l} \hline - \frac{42.953161110595605^{\cdot}}{k} \\ \hline \end{array} \right.$$

$$\begin{aligned}
& \text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \cdot \text{Cp}}{\sqrt{x1}} \sqrt{\frac{x4}{x2}}^{1.07961} + \\
& \sqrt{x4} \sqrt{x2} \left(3.9951410513577697 \cdot \text{Cm} x5^2 - \frac{1.1693095760071521 \cdot \text{Cm} x5^2}{\sqrt{100. + x1L}^{0.16}} - \right. \\
& \left. \frac{0.000013593223821083144 \cdot \text{Cm} x5^2}{\sqrt{3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x1 x5DL}^2} - \right. \\
& \left. \sqrt{7.119896775568149 \cdot \text{Cm}} \sqrt{1. - \text{Cp} + \frac{0.121563}{-1. + 4. \cdot \text{Cp}}} \right) \\
& \sqrt{\frac{x2}{x1}}^{1.06806} \sqrt{\frac{x1^2}{\text{Cb} x2 x4}}^{0.36486} \sqrt{\frac{x4}{x1}}^{0.46106} x5^2 \cdot \sqrt{\quad} \\
& \sqrt{\text{H}1. - \text{Cpl}^{0.60247} \sqrt{3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x1 x5DL}^2} \cdot \sqrt{\quad} \\
& \sqrt{7.831886453124964 \cdot \text{Cm} \cdot \text{Cstern}} \sqrt{1. - \text{Cp} + \frac{0.121563}{-1. + 4. \cdot \text{Cp}}} \\
& \sqrt{\frac{x2}{x1}}^{1.06806} \sqrt{\frac{x1^2}{\text{Cb} x2 x4}}^{0.36486} \sqrt{\frac{x4}{x1}}^{0.46106} x5^2 \cdot \sqrt{\quad} \cdot \sqrt{\text{H}1. - \text{Cpl}^{0.60247}} \\
& \sqrt{3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x1 x5DL}^2 \cdot \sqrt{\quad} + \\
& \sqrt{x2} \left(0.601404 \cdot \text{Ntd} + \sqrt{\text{H} - 0.02159136 + 0.19942607999999998 \cdot \text{Cb} x3} + \right. \\
& \left. \sqrt{x4} \cdot \sqrt{\text{Cb} + \frac{9.262935519290624 \cdot \text{c}^7 \cdot 3.78613}{\sqrt{90. - \text{hal}^{1.37563}}}} \cdot \sqrt{\text{Cb}} \right) \\
& \sqrt{\text{a}} \left(-1.41434649220055 \cdot \sqrt{\frac{\text{ABT}^{1.5}}{-\text{hb} + x4 + \frac{\text{ABT}}{x2 x4}}} + \sqrt{\frac{1}{\sqrt{x1}}} \right) \\
& \sqrt{\frac{5.081833302662383}{\text{c}16} - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4}} - \\
& \sqrt{\frac{1.75254 \cdot \text{Cb} x2 x4}{\text{H} \text{Cb} x1 x2 x4L^{0.6666666666666667}}} \sqrt{\quad} + 0. \cdot \sqrt{\frac{0.02952161110505605}{\sqrt{x1}}} \\
& \text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \cdot \text{Cp}}{\sqrt{x1}} \sqrt{\quad} \\
& \sqrt{\frac{x4}{x2}}^{1.07961} \sqrt{\quad} - 0.00005140168988217349 \cdot \text{Cm} x5^2 - \sqrt{\quad}
\end{aligned}$$

$$\begin{aligned}
& 0.00005099076767308373 \cdot C_b \cdot C_m^{3/2} x^{5/2} + 0.00003297979143059111 \cdot C_m^{3/2} x^{5/2} - \\
& 0.00004259025476151807 \cdot C_m^{3/2} C_w x^{5/2} + \frac{0.00015044397038684924 \cdot C_m^{3/2} x^{5/2}}{H_{100} + x L^{0.16}} + \\
& \frac{0.00014924127123829383 \cdot C_b \cdot C_m^{3/2} x^{5/2}}{H_{100} + x L^{0.16}} - \\
& \frac{0.00009652621882124226 \cdot C_m^{3/2} x^{5/2}}{H_{100} + x L^{0.16}} + \frac{0.0001246544041800529 \cdot C_m^{3/2} C_w x^{5/2}}{H_{100} + x L^{0.16}} + \\
& \frac{0.0017489111557471224 \cdot C_m^{3/2} x^{5/2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} + \\
& \frac{0.0017349297781451662 \cdot C_b \cdot C_m^{3/2} x^{5/2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} - \\
& \frac{0.0011221172937969414 \cdot C_m^{3/2} x^{5/2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} + \\
& \frac{0.0014491074485931147 \cdot C_m^{3/2} C_w x^{5/2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} + \\
& \frac{0.0009160495745862653 \cdot C_m^{3/2} \left(1 - C_p + \frac{C_p}{-1 + 4 C_p} \right)^{0.121563}}{H_{1. - C_p L^{0.60247}} H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} L + \\
& \frac{J_{x1}^{x2} \cdot 1.06806 \cdot J_{x1}^{x2} \cdot 0.36486 \cdot J_{x1}^{x4} \cdot 0.46106 \cdot x^{5/2}}{k C_b x^2 x^4} \\
& \frac{0.0009087263695381903 \cdot C_b \cdot C_m^{3/2} \left(1 - C_p + \frac{C_p}{-1 + 4 C_p} \right)^{0.121563}}{H_{1. - C_p L^{0.60247}} H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} L - \\
& \frac{J_{x1}^{x2} \cdot 1.06806 \cdot J_{x1}^{x2} \cdot 0.36486 \cdot J_{x1}^{x4} \cdot 0.46106 \cdot x^{5/2}}{k C_b x^2 x^4} \\
& \frac{0.0005877457332470735 \cdot C_m^{3/2} \left(1 - C_p + \frac{C_p}{-1 + 4 C_p} \right)^{0.121563}}{H_{1. - C_p L^{0.60247}} H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} L + \\
& \frac{J_{x1}^{x2} \cdot 1.06806 \cdot J_{x1}^{x2} \cdot 0.36486 \cdot J_{x1}^{x4} \cdot 0.46106 \cdot x^{5/2}}{k C_b x^2 x^4} \\
& \frac{0.000010076545320448919 \cdot C_m^{3/2} C_{stern} \left(1 - C_p + \frac{C_p}{-1 + 4 C_p} \right)^{0.121563}}{H_{1. - C_p L^{0.60247}} H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} x L x 5 D^2} L + \\
& \frac{J_{x1}^{x2} \cdot 1.06806 \cdot J_{x1}^{x2} \cdot 0.36486 \cdot J_{x1}^{x4} \cdot 0.46106 \cdot x^{5/2}}{k C_b x^2 x^4}
\end{aligned}$$

$$\begin{aligned}
& \left[9.995990064920093 \cdot 10^{-6} C_b \cdot C_m C_{stern} \int_{-1}^{-0.4} \frac{1}{C_p} \right]^{0.121563} \\
& \left[\int_{x_1}^{x_2} \frac{x^2}{x^2} \right]^{1.06806} \left[\int_{x_1}^{x_2} \frac{x^2}{C_b x^2 x^4} \right]^{0.36486} \left[\int_{x_1}^{x_2} \frac{x^4}{x^4} \right]^{0.46106} x^{5.2} \\
& \left[H_1 \cdot C_{pl}^{0.60247} H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2 \right] - \\
& \left[6.4652030657178096 \cdot 10^{-6} C_m^{3.2} C_{stern} \int_{-1}^{-0.4} \frac{1}{C_p} \right]^{0.121563} \\
& \left[\int_{x_1}^{x_2} \frac{x^2}{x^2} \right]^{1.06806} \left[\int_{x_1}^{x_2} \frac{x^2}{C_b x^2 x^4} \right]^{0.36486} \left[\int_{x_1}^{x_2} \frac{x^4}{x^4} \right]^{0.46106} x^{5.2} \\
& \left[H_1 \cdot C_{pl}^{0.60247} H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2 \right] + \\
& \left[0.0007590175506922375 \cdot C_m C_w \int_{-1}^{-0.4} \frac{1}{C_p} \right]^{0.121563} \\
& \left[\int_{x_1}^{x_2} \frac{x^2}{x^2} \right]^{1.06806} \left[\int_{x_1}^{x_2} \frac{x^2}{C_b x^2 x^4} \right]^{0.36486} \left[\int_{x_1}^{x_2} \frac{x^4}{x^4} \right]^{0.46106} x^{5.2} \\
& \left[H_1 \cdot C_{pl}^{0.60247} H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2 \right] + \\
& \left[8.349193057614612 \cdot 10^{-6} \cdot C_m C_{stern} C_w \int_{-1}^{-0.4} \frac{1}{C_p} \right]^{0.121563} \\
& \left[\int_{x_1}^{x_2} \frac{x^2}{x^2} \right]^{1.06806} \left[\int_{x_1}^{x_2} \frac{x^2}{C_b x^2 x^4} \right]^{0.36486} \left[\int_{x_1}^{x_2} \frac{x^4}{x^4} \right]^{0.46106} x^{5.2} \\
& \left[H_1 \cdot C_{pl}^{0.60247} H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2 \right] + \\
& x^4 \left[-0.00010440143618489008 \cdot C_m^{3.2} x^{5.2} - 0.00010198153534616746 \cdot C_b \cdot C_m^{3.2} x^{5.2} + \right. \\
& 0.00006595958286118222 \cdot C_m^{3.2} x^{5.2} - 0.00008518050952303614 \cdot C_m C_w x^{5.2} + \\
& \frac{0.00030556517907772703 \cdot C_m^{3.2} x^{5.2}}{H_{100} + x_1 L^{0.16}} + \frac{0.00029848254247658766 \cdot C_b \cdot C_m^{3.2} x^{5.2}}{H_{100} + x_1 L^{0.16}} - \\
& \frac{0.00019305243764248452 \cdot C_m^{3.2} x^{5.2}}{H_{100} + x_1 L^{0.16}} + \frac{0.0002493088083601058 \cdot C_m C_w x^{5.2}}{H_{100} + x_1 L^{0.16}} + \\
& \frac{0.003552195206778577 \cdot C_m^{3.2} x^{5.2}}{H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2} + \\
& \frac{0.0034698595562903324 \cdot C_b \cdot C_m^{3.2} x^{5.2}}{H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2} - \\
& \left. \frac{0.0022442345875938827 \cdot C_m^{3.2} x^{5.2}}{H_3.6363748627922092 + 0.43429448190325176 \text{Log} x_1 x_5 D L^2} + \right]
\end{aligned}$$

$$\begin{aligned}
& 0.0028982148971862295 \cdot \text{Cm} \text{Cw} x5^2 \cdot \\
& \#3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot + \\
& 0.0018605787362748032 \cdot \text{Cm} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} x^2 \\ x1 \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} x^2 \\ Cb x2 x4 \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} x^4 \\ x1 \end{array} \right\}^{0.46106} x5^2 \cdot \mu \\
& \# \# 1. - Cpl^{0.60247} \# 3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot L + \\
& 0.0018174527390763806 \cdot Cb \cdot \text{Cm} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} x^2 \\ x1 \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} x^2 \\ Cb x2 x4 \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} x^4 \\ x1 \end{array} \right\}^{0.46106} x5^2 \cdot \mu \\
& \# \# 1. - Cpl^{0.60247} \# 3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot L - \\
& 0.001175491466494147 \cdot \text{Cm}^{3+2} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} x^2 \\ x1 \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} x^2 \\ Cb x2 x4 \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} x^4 \\ x1 \end{array} \right\}^{0.46106} x5^2 \cdot \mu \\
& \# \# 1. - Cpl^{0.60247} \# 3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot L + \\
& 0.000020466366099022835 \cdot \text{Cm} \text{Cstern} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} x^2 \\ x1 \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} x^2 \\ Cb x2 x4 \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} x^4 \\ x1 \end{array} \right\}^{0.46106} x5^2 \cdot \mu \\
& \# \# 1. - Cpl^{0.60247} \# 3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot L + \\
& 0.000019991980129840186 \cdot Cb \cdot \text{Cm} \text{Cstern} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} x^2 \\ x1 \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} x^2 \\ Cb x2 x4 \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} x^4 \\ x1 \end{array} \right\}^{0.46106} x5^2 \cdot \mu \\
& \# \# 1. - Cpl^{0.60247} \# 3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot L - \\
& 0.000012930406131435619 \cdot \text{Cm}^{3+2} \text{Cstern} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} x^2 \\ x1 \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} x^2 \\ Cb x2 x4 \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} x^4 \\ x1 \end{array} \right\}^{0.46106} x5^2 \cdot \mu \\
& \# \# 1. - Cpl^{0.60247} \# 3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x50L^2 \cdot L + \\
& 0.001518035101384475 \cdot \text{Cm} \text{Cw} \left\{ \begin{array}{l} 1. - Cp + \\ -1. +4. Cp \end{array} \right\}^{0.121563}
\end{aligned}$$

$$\begin{aligned}
& \left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{12}}{Cb x^2 x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5^2} \\
& \cdot \text{Cpl}^{0.60247} \cdot \{ 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x^1 x^{50} l^2 \} + \\
& 0.000016698386115229225 \cdot \text{Cm} \cdot \text{Cstem} \cdot \text{Cw} \cdot \left(\frac{x^{0.121563}}{x^{1.4} - \text{Cp} + x^4 \cdot \text{Cp}} \right) \\
& \left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{12}}{Cb x^2 x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5^2} \\
& \cdot \text{Cpl}^{0.60247} \cdot \{ 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x^1 x^{50} l^2 \} + \\
& 0.0011569131025314175 \cdot x^5 \cdot \left(\frac{x^{2.2366662295036503} \cdot 10^c 7^{3.78613}}{H90 - \text{hal}^{1.37565}} \right) \\
& \cdot \left(\frac{Cb \bar{a}^{-1.41434649220055}}{-hb + x^4 + \frac{ABT^{1.5}}{ABT \cdot x^2 \cdot x^4}} \right) + \\
& \left(\frac{x^{5.081833302662383} \cdot c^{16} - \frac{4.79323 \cdot x^2}{x^1} + \frac{0.0140407 \cdot x^1}{x^4}}{x^1} \right) - \\
& \left(\frac{H C b x^1 x^2 x^4 \cdot \frac{1.75254 \cdot C b x^2 x^4}{0.666666666666667}}{0} + 0 \cdot \bar{a} \cdot \left(\frac{x^{13.953161110505605}}{x^1} \right) \right) \cdot \text{CosB} \\
& \left(\frac{-13.34248601399447 + 53.59231882287779 \cdot C p}{x^1} \right) \\
& \cdot x^2 \cdot \left(\frac{x^{0.8} \cdot AT}{C m x^2 x^4} \right) \cdot \left(\frac{x^4}{x^2} \right)^{1.07961} + 135.730345312 \cdot AT \cdot c^6 \cdot x^{5^2} + \\
& 135.730345312 \cdot (-0.00205 - 0.0010954451150103322 \cdot H - 0.04) + 1 \cdot c^4 l \\
& \cdot \left(\frac{Cb^4 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^{1.5}}{-hb+x^4+ABT \cdot x^2 \cdot x^4} \cdot x^1 + \frac{0.006}{H^{100} + x^{11} \cdot 0.16}}{x^1} \right) \\
& \left(\frac{x^{2.38} \cdot ABT}{Cb} \right) \cdot \text{Cm} \cdot x^1 \cdot \left(\frac{x^{0.453}}{J} \right) + 0.4425 \cdot Cb - 0.2862 \cdot \text{Cm} + \\
& 0.3696 \cdot Cw - \left(\frac{0.003467 \cdot x^2}{x^4} \right) \cdot H x^2 + 2 \cdot x^4 l \cdot x^{5^2} + \\
& 569.2916975592 \cdot ABT^{1.5} \cdot \bar{a} \cdot \left(\frac{x^{13.953161110505605}}{-1.5 \cdot hb + x^4} \right) \cdot \left(\frac{x^5 \cdot l}{l} \right) - 2.45175 \cdot \frac{ABT}{x^1} -
\end{aligned}$$

$$9.807^{\wedge} hb + 9.807^{\wedge} x4 + 0.03969110399999999^{\wedge} x5^2 \cdot \text{MM}^{\wedge} 3. \text{''}$$

$$13.779184373405185^{\wedge} + 1. \text{''} \cdot \text{lx5}^{\wedge} \text{''} \cdot \text{I} \cdot \text{I} - 2.45175^{\wedge} \cdot \text{ABT} - 9.807^{\wedge} hb + 9.807^{\wedge} x4 + 0.03969110399999999^{\wedge} x5^2 \cdot \text{MM}^{\wedge} 2. \text{''} +$$

$$10.179775898399999^{\wedge} \cdot 0.93^{\wedge} + \text{H1.}^{\wedge} - \text{Cpl}^{0.60247} \cdot 0.487118^{\wedge} \text{H1.}^{\wedge} + 0.011^{\wedge} \text{Csternl}$$

$$1. \text{''} - \text{Cp} + \text{Cp} \cdot 0.121563^{\wedge} \cdot \text{J} \cdot \text{x2} \cdot \text{x1} \cdot 1.06806^{\wedge} \cdot \text{J} \cdot \text{x1}^2 \cdot \text{Cb} \cdot \text{x2} \cdot \text{x4} \cdot 0.36486^{\wedge}$$

$$\text{J} \cdot \text{x4} \cdot 0.46106^{\wedge} \cdot \text{J} \cdot \text{x4} \cdot \text{ABT} \cdot \text{Cm} \cdot \text{x1} \cdot \text{J} \cdot 0.453^{\wedge} + 0.4425^{\wedge} \text{Cb} -$$

$$0.2862^{\wedge} \text{Cm} + 0.3696^{\wedge} \text{Cw} - \frac{0.003467^{\wedge} \cdot \text{x2}}{\text{x4}} \cdot \text{Hx2} + 2. \text{''} \cdot \text{x4} \cdot \text{LN} \cdot \text{x5}^2 \cdot \text{''}$$

$$\text{H3.6363748627922092}^{\wedge} + 0.43429448190325176^{\wedge} \text{Log} \cdot \text{x1} \cdot \text{x5DL}^2 \cdot \text{''}^{\wedge} 0.775^{\wedge} +$$

$$0.009331373722001119^{\wedge} \text{ABT} \cdot \text{x5}^2 \cdot \text{''} + \text{Cb} \cdot \text{H3.6363748627922092}^{\wedge} + 0.43429448190325176^{\wedge} \text{Log} \cdot \text{x1} \cdot \text{x5DL}^2 \cdot \text{''}$$

$$0.004887613015821227^{\wedge}$$

ABT

$$1. \text{''} - \text{Cp} + \text{Cp} \cdot 0.121563^{\wedge}$$

$$\text{J} \cdot \text{x2} \cdot \text{x1} \cdot 1.06806^{\wedge}$$

$$\text{J} \cdot \text{x1}^2 \cdot \text{Cb} \cdot \text{x2} \cdot \text{x4} \cdot 0.36486^{\wedge}$$

$$\text{J} \cdot \text{x4} \cdot \text{x1} \cdot 0.46106^{\wedge}$$

$$\text{x5}^2 \cdot \text{''}$$

$$\text{H} \cdot \text{Cb} \cdot \text{H1.}^{\wedge} - \text{Cpl}^{0.60247} \cdot \text{H3.6363748627922092}^{\wedge} + 0.43429448190325176^{\wedge} \text{Log} \cdot \text{x1} \cdot \text{x5DL}^2 \cdot \text{''} \cdot \text{L} +$$

$$0.00005376374317403349^{\wedge}$$

ABT

Cstern

$$1. \text{''} - \text{Cp} + \text{Cp} \cdot 0.121563^{\wedge}$$

$$\begin{aligned}
& \int_0^1 x^2 \ln(x) dx = -\frac{1}{3} \\
& \int_0^1 x^2 \ln(x^2) dx = -\frac{2}{3} \\
& \int_0^1 x^4 \ln(x) dx = -\frac{1}{5} \\
& \int_0^1 x^5 \ln(x) dx = -\frac{1}{6}
\end{aligned}$$

$$H(x) = -\frac{1}{3} \ln(x) - \frac{1}{5} \ln(x^2) - \frac{1}{6} \ln(x^5) + \frac{1}{3} \ln(3.6363748627922092) + 0.43429448190325176 \ln(x)$$

Appendix C

Mathematical Form of the Constraint on the Metacentric Height

$$GM - GM_{min} \geq 0$$

where

$$GM - GM_{min} =$$

$$\begin{aligned}
 KM - & \frac{0.25 \cdot H \cdot 0.036 + 5.293490143503486 \cdot x_1^{2.1} \cdot H \cdot 5.76 \cdot Ntd^{2.2} + Hx^3 - x^4 \cdot 2.1}{Cb \cdot Hx^3 - x^4 \cdot x^4} + \\
 & -20862.2384999999996 \cdot x^3 - H \cdot 12. \cdot H - 828.3304293599999 \cdot + 0.601404 \cdot Ntd \cdot x_1 \cdot x_2 - 0.02159136 \cdot x_1 \\
 & x_2 \cdot x_3 + Cb \cdot H - 1512.10653491999998 \cdot + 0.199426079999999998 \cdot x_1 \cdot x_2 \cdot x_3 \\
 & H - 82.6702 \cdot + 0.050117 \cdot Ntd \cdot x_1 \cdot x_2 \cdot H \cdot 1.83 \cdot + 1.22 \cdot Ntd \cdot + x_3 \cdot + \\
 & H - 0.0918 \cdot + 0.8479 \cdot Cb \cdot H - 148.6129 \cdot + 0.0196 \cdot x_1 \cdot x_2 \cdot x_3 \\
 & H \cdot 1.83 \cdot + H \cdot 2.0333333333333333 \cdot - 0.8133333333333332 \cdot Cb \cdot \\
 & IntegerPart@0.4098360655737705 \cdot H - 1.83 \cdot + x_3 \cdot \\
 & H - 828.3304293599999 \cdot - 1512.10653491999998 \cdot Cb + 0.601404 \cdot Ntd \cdot x_1 \cdot x_2 - \\
 & 0.02159136 \cdot x_1 \cdot x_2 \cdot x_3 + 0.199426079999999998 \cdot Cb \cdot x_1 \cdot x_2 \cdot x_3 + \\
 & 0.00043983364370304626 \cdot - 435.41364296081287 \cdot Hx_1 \cdot x_2 \cdot x_3^{0.724} \cdot - \\
 & 40.083164870667126 \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot - 0.01842450571162964 \cdot Cb \\
 & \int_k 1077.5862068965514 \cdot + 1. \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^3} \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot - \\
 & 0.037197176999979084 \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^5} \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot + \\
 & x_3 \cdot - 1458.6357039187228 \cdot Hx_1 \cdot x_2 \cdot x_3^{0.724} \cdot + 1. \cdot x_1 \cdot Hx_1 \cdot x_2 \cdot x_3^{0.724} \cdot - \\
 & 64.64612830341193 \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot + 0.00010854318961127322 \cdot Cb \\
 & \int_k -295002.5735002021 \cdot - 273.76238820818764 \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^3} \cdot + \\
 & 1077.5862068965519 \cdot J \cdot \frac{x_1^{2.2}}{x^3} \cdot + 1. \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^3} \cdot J \cdot \frac{x_1^{2.2}}{x^3} \cdot \\
 & Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot - 0.05999160706556627 \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^3} \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot - \\
 & 0.17171627830593794 \cdot J \cdot \frac{x_1^{2.2}}{x^3} \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot + 0.00009285950878661341 \cdot \\
 & Cb^2 \cdot \int_k 1077.5862068965514 \cdot + 1. \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^3} \cdot J \cdot \frac{x_1^{2.2}}{x^3} \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot - \\
 & 0.00015935270626791042 \cdot J - 8.3 \cdot + \frac{x_1^{1.691}}{x^5} \cdot J \cdot \frac{x_1^{2.2}}{x^3} \cdot Hx_1 \cdot x_2 \cdot x_3^{1.003} \cdot -
 \end{aligned}$$

1.2362609499624329`

$$\frac{x^5}{k} - \frac{Cm \cdot H90 \cdot \sqrt{-ha}^{1.37565}}{k} \cdot 1.78933298360292 \cdot 10^7 \cdot c^{7.78613} \cdot Cb$$

$$\frac{\bar{a}^{\lambda}}{k} - 1.41434649220055 \cdot \frac{ABT^{1.5}}{-hb + x^4 + ABT \cdot x^2 \cdot x^4}$$

$$\frac{5.081833302662383 \cdot c^{16}}{x^1} - \frac{24.358395841320416 \cdot x^2}{x^1}$$

$$\frac{0.07135249685269171 \cdot x^1}{x^4}$$

$$\frac{8.906116136247933 \cdot Cb \cdot x^2 \cdot x^4}{H Cb \cdot x^1 \cdot x^2 \cdot x^4}$$

$$0 \cdot \bar{a} \cdot \cos \beta$$

$$\frac{-13.34248601399447 + 53.59231882287779 \cdot Cb}{x^1}$$

$$\frac{x^4}{x^2} \cdot H \cdot AT - 1.25 \cdot Cm \cdot x^4 + 135.730345312$$

$$AT \cdot c^6 \cdot x^5 + 135.730345312 - 0.00205 - 0.0010954451150103322$$

$$H - 0.04 + 1 \cdot c^4 \cdot Cb^4 \cdot \bar{a} - 1.41434649220055 \cdot \frac{ABT^{1.5}}{-hb + x^4 + ABT \cdot x^2 \cdot x^4} \cdot \frac{1}{x^1}$$

$$\frac{0.006}{H100 + x^1} + \frac{2.38 \cdot ABT}{Cb} + Cm \cdot x^1 \cdot J \cdot 0.453 + 0.4425 \cdot Cb$$

$$0.2862 \cdot Cm + 0.3696 \cdot Cw - \frac{0.003467 \cdot x^2}{x^4} \cdot H \cdot x^2 + 2 \cdot x^4 \cdot LN$$

$$x^5 + 569.2916975592 \cdot ABT^{1.5} \cdot \bar{a} - \frac{1.5 \cdot hb \cdot x^4}{k}$$

$$lx^5 \cdot l' \cdot l - 2.45175 \cdot ABT - 9.807 \cdot hb + 9.807 \cdot x^4 +$$

$$0.0396911039999999 \cdot x^5 \cdot \text{''''''}^3$$

$$l3.779184373405185 + 1 \cdot lx^5 \cdot l' \cdot l - 2.45175 \cdot ABT - 9.807 \cdot hb + 9.807 \cdot x^4 + 0.0396911039999999 \cdot x^5 \cdot \text{''''''}^2 \cdot \text{''} +$$

$$\begin{aligned}
& 10.179775898399999 \cdot 0.93 + \frac{H1 \cdot - Cpl^{0.60247}}{k} \cdot 0.487118 \\
& H1 \cdot + 0.011 \cdot Csternl \cdot \frac{1 \cdot - Cp + \dots}{k} \cdot 0.121563 \\
& J \frac{x^2}{x1} \cdot 1.06806 \cdot j \frac{x1^2}{k} \cdot 0.36486 \cdot J \frac{x^4}{x1} \cdot 0.46106 \cdot \frac{V}{Z} \\
& J \frac{2.38 \cdot ABT}{Cb} + \dots \cdot Cm \cdot x1 \cdot J0.453 \cdot + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x^2}{x4} \cdot Hx2 + 2 \cdot x4 \cdot x5^2 \cdot \frac{V}{Z} \\
& H3.6363748627922092 + 0.43429448190325176 \\
& \text{Log} @ x1 \cdot x5 \cdot DL^{\wedge 2} \cdot \frac{V}{Z} \cdot \frac{V}{Z} \cdot \wedge 0.775 - \\
& 0.7891027340185741 \cdot x5 - \frac{Cm \cdot H90 \cdot - hal^{1.37565}}{k} \cdot 1.78933298360292 \cdot \wedge 10 \\
& c7^{3.78613} \cdot Cb \cdot \bar{a} \cdot \frac{V}{Z} - 1.41434649220055 \cdot \& \cdot \frac{ABT^{1.5}}{-hb + x4 + ABT \cdot x2 \cdot x4} - \\
& \frac{5.081833302662383 \cdot c16}{I \cdot \frac{V}{Z} \cdot x1} - \frac{24.358395841320416 \cdot x^2}{x1 \cdot \frac{V}{Z} \cdot x1} + \\
& \frac{0.07135249685269171 \cdot x1}{x4 \cdot \frac{V}{Z} \cdot x1} - \\
& \frac{8.906116136247933 \cdot Cb \cdot x2 \cdot x4}{HCb \cdot x1 \cdot x2 \cdot x4 \cdot \frac{V}{Z} \cdot x1} + 0 \cdot \bar{a} \cdot \frac{V}{Z} \cdot \frac{V}{Z} \\
& \text{CosB} \cdot \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{I \cdot \frac{V}{Z} \cdot x1} \cdot x1 \\
& J \frac{x^4}{x2} \cdot 1.07961 \cdot H1 \cdot AT - 1.25 \cdot Cm \cdot x2 \cdot x4 \cdot \frac{V}{Z} + 135.730345312 \cdot AT \cdot c6 \cdot x5^2 + \\
& 135.730345312 \cdot -0.00205 - 0.0010954451150103322 \cdot H - 0.04 \cdot + 1 \cdot c4L \\
& Cb^4 \cdot \bar{a} \cdot -1.41434649220055 \cdot \& \cdot \frac{ABT^{1.5}}{-hb + x4 + ABT \cdot x2 \cdot x4} \cdot \frac{V}{Z} + \frac{0.006 \cdot \frac{V}{Z}}{H100 \cdot + x1 \cdot L^{0.16} \cdot \frac{V}{Z}}
\end{aligned}$$

$$\begin{aligned}
& \int \frac{2.38 \sqrt{ABT}}{Cb} + \frac{0.003467 x^2}{x^4} Hx^2 + 2. x4Lx5^2 + 569.2916975592 \sqrt{ABT}^{1.5} \\
& - \frac{0.566236570612214}{k} \int \frac{1}{x} dx - 2.45175 \sqrt{ABT} - 9.807 \sqrt{hb} + \\
& 9.807 x^4 + 0.03969110399999999 x^5 + 13.779184373405185 + 1. x5 \sqrt{ABT} - 9.807 \\
& \sqrt{hb} + 9.807 x^4 + 0.03969110399999999 x^5 + 10.179775898399999 \sqrt{0.93} + \sqrt{H1. - Cp}^{0.60247} \sqrt{0.487118} \\
& \sqrt{H1.} + 0.011 \sqrt{Cstern} \sqrt{1. - Cp} + 0.121563 \sqrt{-1. +4. Cp} \\
& \int \frac{x^2}{x1} \sqrt{1.06806} + \int \frac{x^2}{Cb x2 x4} \sqrt{0.36486} + \int \frac{x^4}{x1} \sqrt{0.46106} \\
& \int \frac{2.38 \sqrt{ABT}}{Cb} + \frac{0.003467 x^2}{x^4} Hx^2 + 2. x4Lx5^2 + 569.2916975592 \sqrt{ABT}^{1.5} \\
& + 0.3696 \sqrt{Cw} - \sqrt{H3.636748627922092} + 0.43429448190325176 \sqrt{\text{Log}x1 x5D}^{0.775} - \\
& 3.090765690163143 \sqrt{H90.} - \sqrt{hal}^{1.37565} \sqrt{2.2366662295036503} \sqrt{c7}^{3.78613} \\
& \sqrt{Cb} \sqrt{a} - 1.41434649220055 \sqrt{-hb + x4} + \sqrt{ABT}^{1.5} \sqrt{x2 x4} + \sqrt{1} \sqrt{x1}^{0.9} \\
& \int 5.081833302662383 \sqrt{-c16} - \sqrt{4.79323 x2} \sqrt{x1} + \sqrt{0.0140407 x1} \sqrt{x4} - \\
& \sqrt{1.75254 Cb x2 x4} \sqrt{Hcb x1 x2 x4}^{0.6666666666666667} \sqrt{0.} \sqrt{a} \sqrt{-12.05216110505605} \sqrt{x1} \\
& \sqrt{\text{Cos}B} \sqrt{-13.34248601399447} + \sqrt{53.59231882287779} \sqrt{Cp} \sqrt{x1}
\end{aligned}$$

$$\begin{aligned}
& x2 J1 \cdot - \frac{0.8 \cdot \text{AT}}{\text{Cm} x2 x4} x4 J \frac{x4}{x2} + 135.730345312 \cdot \text{AT} c6 x5^2 + \\
& 135.730345312 \cdot -0.00205 - 0.0010954451150103322 \cdot \text{H} - 0.04 + 1 \cdot c4L \\
& \text{Cb}^4 \cdot \bar{a} - 1.41434649220055 \cdot \frac{\text{ABT}^5}{-hb+x4+ \text{ABT} x2 x4} \cdot \frac{\text{H}}{x1} + \frac{0.006}{\text{H}100 \cdot + x1L^{0.16}} \\
& J \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \text{Cm} x1 J0.453 + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + 0.3696 \cdot \\
& \text{Cw} - \frac{0.003467 \cdot x2}{x4} \text{H} x2 + 2 \cdot x4L N x5^2 + \\
& 569.2916975592 \cdot \text{ABT}^{1.5} \bar{a} - \frac{0.5563265306122145}{-1.5 \cdot hb+x4} \cdot \text{H} x5 \cdot \text{I} \cdot \text{I} - 2.45175 \cdot \text{ABT} - \\
& 9.807 \cdot \text{hb} + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^3 \\
& 13.779184373405185 + 1 \cdot \text{I} x5 \cdot \text{I} \cdot \text{I} - 2.45175 \cdot \text{ABT} - 9.807 \cdot \text{hb} + \\
& 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^2 \cdot \text{M} + \\
& 10.179775898399999 \cdot 0.93 + \frac{\text{H}1 \cdot - \text{Cpl}^{0.6024}}{\text{H}1 \cdot - \text{Cp} + \frac{-1 \cdot +4 \cdot \text{Cp}}{\text{H}1 \cdot + 0.011 \cdot \text{CsternL}}} \cdot 0.487118 \\
& \text{H}1 \cdot + 0.011 \cdot \text{CsternL} \cdot \frac{0.121563}{\text{H}1 \cdot - \text{Cp} + \frac{-1 \cdot +4 \cdot \text{Cp}}{\text{H}1 \cdot + 0.011 \cdot \text{CsternL}}} \\
& J \frac{x2}{x1} \cdot 1.06806 \cdot J \frac{x12}{\text{Cb} x2 x4} \cdot 0.36486 \cdot J \frac{x4}{x1} \cdot 0.46106 \\
& J \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \text{Cm} x1 J0.453 + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + \\
& 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x2}{x4} \text{H} x2 + 2 \cdot x4L N x5^2 \\
& \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x1 x5DL^2 \cdot \text{H}^2 \\
& 40896.14657063999 + 0.601404 \cdot \text{Ntd} x1 x2 - \\
& 0.02159136 \\
& x1 \\
& x2 \\
& x3 + \\
& \text{Cb}
\end{aligned}$$

$$H - 1512.1065349199998^{\cdot} + 0.19942607999999998^{\cdot} x_1 x_2 x_3 L +$$

$$1.03^{\cdot} \left\{ 0.6197720682895518^{\cdot} H x_1 x_2 x_3 L^{0.724^{\cdot}} + 0.05705477170296265^{\cdot} \right.$$

$$H_1^{\cdot} + 0.49532^{\cdot} C b L$$

$$\left\{ 1^{\cdot} + 0.000928^{\cdot} J - 8.3^{\cdot} + \frac{x_1^{1.691^{\cdot}}}{x_3} \right\} H x_1 x_2 x_3 L^{1.003^{\cdot}} + 0.0011232166043994344^{\cdot}$$

$$\left\{ x_5 \right\} \left\{ H 90^{\cdot} - h a l^{1.57565^{\cdot}} \right\} 2.2366662295036503^{\cdot} * \wedge 10 c 7^{3.78613^{\cdot}} C b$$

$$\left\{ \bar{a}^{\wedge} \right\} - 1.41434649220055^{\cdot} \& \left\{ \frac{A B T^{1.5^{\cdot}}}{-h b + x_4 + A B T x_2 x_4} + \frac{1}{x_1} \right\} \left\{ 5.081833302662383^{\cdot} \right\} - c 16 - \frac{4.79323^{\cdot} x_2}{x_1} + \frac{0.0140407^{\cdot} x_1}{x_4} - \frac{1.75254^{\cdot} C b x_2 x_4}{H C b x_1 x_2 x_4 L^{0.6666666666666667^{\cdot}}} + 0^{\cdot} \bar{a} - \frac{12.953161110595605^{\cdot}}{x_1}$$

$$\text{Cos} B \frac{-13.34248601399447^{\cdot} + 53.59231882287779^{\cdot} C b}{x_1} x_1$$

$$x_2 J_1^{\cdot} - \frac{0.8^{\cdot} A T}{C m x_2 x_4} x_4 J \frac{x_4^{1.07961^{\cdot}}}{x_2} + 135.730345312^{\cdot} A T c 6 x_5^{2^{\cdot}} +$$

$$135.730345312^{\cdot} \left\{ -0.00205^{\cdot} - 0.0010954451150103322^{\cdot} H - 0.04^{\cdot} + 1^{\cdot} c 4 L \right.$$

$$C b 4^{\cdot} \bar{a} - 1.41434649220055^{\cdot} \left\{ \frac{A B T^{1.5^{\cdot}}}{-h b + x_4 + A B T x_2 x_4} \right\} \cdot \frac{1}{x_1} + \frac{0.006^{\cdot}}{H 100^{\cdot} + x_1 L^{0.16^{\cdot}}}$$

$$J \frac{2.38^{\cdot} A B T}{C b} + \frac{1}{C m} x_1 J 0.453^{\cdot} + 0.4425^{\cdot} C b - 0.2862^{\cdot} C m + 0.3696^{\cdot} C w -$$

$$\frac{0.003467^{\cdot} x_2}{x_4} H x_2 + 2^{\cdot} x_4 L N x_5^{2^{\cdot}} + \left\{ 569.2916975592^{\cdot} A B T^{1.5^{\cdot}} \right.$$

$$\left. \bar{a} \left\{ \frac{-0.566276206123146^{\cdot}}{x_1} \right\} l x_5^{\cdot} l' l - 2.45175^{\cdot} \cdot \frac{1}{A B T} - 9.807^{\cdot} h b + \right.$$

$$9.807^{\cdot} x_4 + 0.039691103999999999^{\cdot} x_5^{2^{\cdot}} \left. \frac{1}{M M^{\wedge} 3^{\cdot}} \right\}$$

$$l 3.779184373405185^{\cdot} + 1^{\cdot} l x_5^{\cdot} l' l - 2.45175^{\cdot} \cdot \frac{1}{A B T} - 9.807^{\cdot}$$

$$\begin{aligned}
& hb + 9.807 x^4 + 0.03969110399999999 x^5 \\
& 10.179775898399999 \cdot 0.93 + \frac{1}{H1 - Cp} \cdot 0.487118 \\
& H1 + 0.011 \cdot Csternl \cdot \frac{1}{1 - Cp + \frac{1}{-1 + 4 \cdot Cp}} \cdot 0.121563 \\
& J \cdot \frac{x^2}{x1} \cdot 1.06806 + J \cdot \frac{x1^2}{Cb \cdot x2 \cdot x4} \cdot 0.36486 + J \cdot \frac{x4}{x1} \cdot 0.46106 \\
& J \cdot \frac{2 \cdot 38 \cdot ABT}{Cb} + C_m \cdot x1 \cdot J \cdot 0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} \cdot Hx2 + 2 \cdot x4 \cdot x5^2 \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \cdot x1 \cdot x5 \cdot L^2 \cdot 0.775 \\
& 0.00041414026809651473 \cdot \frac{1}{H90 - hal} \cdot 2.236662295036503 \cdot *^10 \\
& c7^{3.78613} \cdot Cb \cdot \bar{a} \cdot -1.41434649220055 \cdot \& \cdot \frac{ABT^{1.5}}{-hb + x4 + ABT \cdot x2 \cdot x4} + \\
& J \cdot \frac{1}{x1} \cdot 5.081833302662383 \cdot J \cdot -c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \\
& H \cdot Cb \cdot x1 \cdot x2 \cdot x4 \cdot \frac{1.75254 \cdot Cb \cdot x2 \cdot x4}{0.6666666666666667} + 0 \cdot \bar{a} \cdot \frac{-12.953161110595605}{k \cdot x1} \cdot \text{CosB} \\
& \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{1 \cdot x1} \\
& x2 \cdot J1 \cdot - \frac{0.8 \cdot AT}{Cm \cdot x2 \cdot x4} \cdot x4 \cdot J \cdot \frac{x4}{x2} \cdot 1.07961 + 135.730345312 \cdot AT \cdot c6 \cdot x5^2 + \\
& 135.730345312 \cdot -0.00205 \cdot -0.0010954451150103322 \cdot H - 0.04 + 1 \cdot c4L \\
& Cb^4 \cdot \bar{a} \cdot -1.41434649220055 \cdot S \cdot \frac{ABT^{1.5}}{-hb+x4+ABT \cdot x2 \cdot x4} \cdot \frac{1}{x1} + \frac{0.006}{H100 + x1L^{0.16}} \\
& J \cdot \frac{2 \cdot 38 \cdot ABT}{Cb} + C_m \cdot x1 \cdot J \cdot 0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm +
\end{aligned}$$

$$\begin{aligned}
& 0.3696 \text{ Cw} - \frac{0.003467 \text{ x}^2}{\text{x}^4} \text{ Hx}^2 + 2. \text{ x}^4 \text{ LN x}^5 \text{ x}^2 + \\
& 569.2916975592 \text{ ABT}^{1.5} \bar{a} \left\{ \frac{-0.566726530612244}{\text{hb}^{\text{hb}^{\text{hb}}}} \right\} \text{ lx}^5 \text{ ' l' l} - 2.45175 \cdot \frac{\text{ABT}}{\text{ABT}} - \\
& 9.807 \text{ hb} + 9.807 \text{ x}^4 + 0.03969110399999999 \text{ x}^5 \text{ MM}^3 \cdot \text{''} \\
& 13.779184373405185 \text{ + 1. lx}^5 \text{ ' l' l} - 2.45175 \cdot \frac{\text{ABT}}{\text{ABT}} - 9.807 \text{ hb} + \\
& 9.807 \text{ x}^4 + 0.03969110399999999 \text{ x}^5 \text{ MM}^2 \cdot \text{''} + \\
& 10.179775898399999 \left\{ 0.93 \text{ + } \frac{\text{Hl} \cdot \text{Cpl}^{0.60247}}{\text{Hl} \cdot \text{Cpl}} \right\} 0.487118 \text{ Hl} \cdot \text{ + 0.011 Csternl} \\
& \left\{ 1. \text{ - Cp} + \frac{0.121563}{-1. \text{ +4. Cp}} \right\} \\
& \left\{ \frac{\text{J x}^2}{\text{x}^1} \right\}^{1.06806} \left\{ \frac{\text{J x}^2}{\text{Cb x}^2 \text{ x}^4} \right\}^{0.36486} \left\{ \frac{\text{J x}^4}{\text{x}^1} \right\}^{0.46106} \text{ VV} \\
& \frac{2.38 \text{ ABT}}{\text{Cb}} + \text{Cm} \text{ x}^1 \text{ J} 0.453 \text{ + 0.4425 Cb} - 0.2862 \text{ Cm} + \\
& 0.3696 \text{ Cw} - \frac{0.003467 \text{ x}^2}{\text{x}^4} \text{ Hx}^2 + 2. \text{ x}^4 \text{ LN x}^5 \text{ x}^2 \cdot \text{''} \\
& \text{H}3.6363748627922092 \text{ + 0.43429448190325176 Log} \text{x}^1 \text{ x}^5 \text{ DL}^2 \cdot \text{''}
\end{aligned}$$

Appendix D

Mathematical Form of the Constraint on the Rolling Period

$$\text{Troll} - \text{Trollmin} \geq 0$$

where

$$\text{Troll} - \text{Trollmin} =$$

$$x_2^2 - 668.845$$

$$\begin{aligned} & \text{AbsBKM} + \frac{1}{K} \left(-20862.238499999996 x_3 - 112. H - 828.3304293599999 + 0.601404 \text{ Ntd} x_1 x_2 - \right. \\ & \quad 0.02159136 x_1 x_2 x_3 + \text{Cb} H - 1512.1065349199998 + 0.19942607999999998 \\ & \quad x_1 x_2 x_3 L H - 82.6702 + 0.050117 \text{ Ntd} x_1 x_2 L H 1.83 + 1.22 \text{ Ntd} + x_3 L + \\ & \quad H - 0.0918 + 0.8479 \text{ Cb} L H - 148.6129 + 0.0196 x_1 x_2 x_3 L \\ & \quad H 1.83 + H 2.033333333333333 - 0.813333333333332 \text{ Cb} L \\ & \quad \text{IntegerPart} @ 0.4098360655737705 H - 1.83 + x_3 L L L L \cdot \\ & \quad H - 828.3304293599999 - 1512.1065349199998 \text{ Cb} + 0.601404 \text{ Ntd} x_1 x_2 - \\ & \quad \left. 0.02159136 x_1 x_2 x_3 + 0.19942607999999998 \text{ Cb} x_1 x_2 x_3 L + \right. \\ & \quad \left. 0.00043983364370304626 \right) - 435.41364296081287 H x_1 x_2 x_3 L^{0.724} - \\ & \quad 40.083164870667126 H x_1 x_2 x_3 L^{1.003} - 0.01842450571162964 \text{ Cb} \\ & \quad \int_K \left(1077.5862068965514 + 1. J - 8.3 + \frac{x_1}{x_3} \right)^{1.691} H x_1 x_2 x_3 L^{1.003} - \\ & \quad 0.037197176999979084 J - 8.3 + \frac{x_1}{x_3} \left. \right)^{1.691} H x_1 x_2 x_3 L^{1.003} + \\ & \quad \left. x_3 \right) - 1458.6357039187228 H x_1 x_2 x_3 L^{0.724} + 1. x_1 H x_1 x_2 x_3 L^{0.724} - \\ & \quad 64.64612830341193 H x_1 x_2 x_3 L^{1.003} + 0.00010854318961127322 \text{ Cb} \\ & \quad \int_K \left(-295002.5735002021 - 273.76238820818764 J - 8.3 + \frac{x_1}{x_3} \right)^{1.691} + \\ & \quad 1077.5862068965519 \left(\frac{x_1}{x_3} \right)^{2.} + 1. J - 8.3 + \frac{x_1}{x_3} \left. \right)^{1.691} \frac{x_1}{x_3} \left. \right)^{2.} \\ & \quad H x_1 x_2 x_3 L^{1.003} - 0.05999160706556627 J - 8.3 + \frac{x_1}{x_3} \left. \right)^{1.691} H x_1 x_2 x_3 L^{1.003} - \\ & \quad 0.17171627830593794 \left(\frac{x_1}{x_3} \right)^{2.} H x_1 x_2 x_3 L^{1.003} + 0.00009285950878661341 \text{ Cb} \\ & \quad \int_K \left(1077.5862068965514 + 1. J - 8.3 + \frac{x_1}{x_3} \right)^{1.691} \\ & \quad \left. \left(\frac{x_1}{x_3} \right)^{2.} H x_1 x_2 x_3 L^{1.003} - 0.00015935270626791042 \right) \end{aligned}$$

$$J - 8.3^{\circ} + \frac{x^1}{x^3}^{1.691^{\circ}} J \frac{x^1}{x^5}^{2^{\circ}} Hx^1 x^2 x^3 L^{1.003^{\circ}} - 1.2362609499624329^{\circ}$$

$$\frac{x^5}{K} - \frac{Cm H90^{\circ} - hal^{1.37565^{\circ}}}{K} 1.78933298360292^{\circ} * 10 c7^{3.78613^{\circ}} Cb$$

$$\bar{a}^{\wedge} - 1.41434649220055^{\circ} \& \frac{ABT^{1.5^{\circ}}}{-hb + x4 + ABT^2 x4} -$$

$$\frac{5.081833302662383^{\circ} c16}{x1^{1.9^{\circ}}} -$$

$$\frac{24.358395841320416^{\circ} x2}{x1^{1.9^{\circ}}} +$$

$$\frac{0.07135249685269171^{\circ} x1}{x4^{1.9^{\circ}}} -$$

$$\frac{8.906116136247933^{\circ} Cb x2 x4}{Hcb x1 x2 x4 L^{0.6666666666666667^{\circ}} x1^{1.9^{\circ}}} +$$

$$0. \bar{a} \frac{-12.052161110595605^{\circ}}{x1^{1.9^{\circ}}} \text{Cos}B$$

$$\frac{-13.34248601399447^{\circ} + 53.59231882287779^{\circ} Cn}{x1^{1.9^{\circ}}}$$

$$x1 \frac{x^4}{x^2}^{1.07961^{\circ}} H1. \text{AT} - 1.25^{\circ} Cm x2 x4 L +$$

$$135.730345312^{\circ} \text{AT} c6 x5^{2^{\circ}} + 135.730345312^{\circ}$$

$$\frac{x^5}{K} - 0.00205^{\circ} - 0.0010954451150103322^{\circ} H - 0.04^{\circ} + 1. \text{c}4L$$

$$Cb^4. \bar{a} - 1.41434649220055^{\circ} \frac{ABT^{1.5^{\circ}}}{-hb+x4+ABT^2 x4}$$

$$\frac{x^1}{x^1} + \frac{0.006^{\circ}}{H100.} + x1 L^{0.16^{\circ}} \frac{2.38^{\circ} ABT}{Cb} +$$

$$Cm x1 J0.453^{\circ} + 0.4425^{\circ} Cb - 0.2862^{\circ} Cm +$$

$$0.3696^{\circ} Cw - \frac{0.003467^{\circ} x2}{x4} Hx2 + 2. x4LN$$

$$x5^{2^{\circ}} + \frac{569.2916975592^{\circ} ABT^{1.5^{\circ}} \bar{a}}{x1^{1.9^{\circ}}} \frac{-0.6666666666666667^{\circ}}{-1.5^{\circ} hb+x4}$$

$$lx5^{\circ} l' l - 2.45175^{\circ} \frac{ABT}{x1^{1.9^{\circ}}} - 9.807^{\circ} hb + 9.807^{\circ} x4 +$$

$$\begin{aligned}
& 0.03969110399999999 \cdot x^5 \cdot \text{MM}^3 \\
& 13.779184373405185 \cdot 1 \cdot \text{Ix5} \cdot \text{I} \cdot \text{I} - 2.45175 \cdot \text{ABT} - 9.807 \cdot \text{hb} + 9.807 \cdot x^4 + \\
& 0.03969110399999999 \cdot x^5 \cdot \text{MM}^2 \cdot \text{M} + \\
& 10.17977589839999999 \cdot 0.93 \cdot \text{H1} - \text{Cpl}^{0.60247} \\
& 0.487118 \cdot \text{H1} + 0.011 \cdot \text{CsternL} \\
& 1 \cdot \text{Cp} + \text{J}^{0.121563} \cdot x^2 \cdot \text{J}^{1.06806} \cdot x^1 \\
& \text{Cb} \cdot x^2 \cdot x^4 \cdot \text{J}^{0.36486} \cdot x^4 \cdot \text{J}^{0.46106} \cdot \text{J}^{2.38} \cdot \text{ABT} + \text{Cb} \\
& \text{Cm} \cdot x^1 \cdot \text{J}^{0.453} + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + \\
& 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x^2}{x^4} \cdot \text{Hx2} + 2 \cdot x^4 \cdot \text{LN} \cdot x^5 \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \\
& \text{Log} \cdot x^1 \cdot x^5 \cdot \text{DL}^2 \cdot \text{V}^{0.775} - 0.7891027340185741 \cdot \\
& x^5 \cdot \text{Cm} \cdot \text{H90} - \text{hal}^{1.37565} \cdot 1.78933298360292 \cdot *^{\wedge} 10 \cdot c^{7^{3.78613}} \cdot \text{Cb} \\
& \tilde{a}^{\wedge} 3 - 1.41434649220055 \cdot \& \cdot \frac{\text{ABT}^{1.5}}{-\text{hb} + x^4 + \text{ABT} \cdot x^2 \cdot x^4} - \\
& \frac{5.081833302662383 \cdot c^{16}}{\text{I} \cdot x^1 \cdot \text{J}^{0.9}} - \frac{24.358395841320416 \cdot x^2}{x^1 \cdot \text{I} \cdot \text{J}^{0.9}} + \\
& \frac{0.07135249685269171 \cdot x^1}{x^4 \cdot \text{I} \cdot \text{J}^{0.9}} - \\
& \frac{8.906116136247933 \cdot \text{Cb} \cdot x^2 \cdot x^4}{\text{HCb} \cdot x^1 \cdot x^2 \cdot x^4 \cdot 0.6666666666666667 \cdot \text{I} \cdot \text{J}^{0.9}} + \\
& 0 \cdot \tilde{a} \cdot \frac{\text{J}^{0.65314114555665}}{\text{I} \cdot x^1} \cdot \text{CosB}
\end{aligned}$$

$$\begin{aligned}
& -13.34248601399447^{\wedge} + 53.59231882287779^{\wedge} \text{Cp} \\
& x1 J \frac{x^4}{x^2}^{1.07961} H1.^{\wedge} \text{AT} - 1.25^{\wedge} \text{Cm} x2 x4 \\
& 135.730345312^{\wedge} \text{AT} c6 x5^{2.^{\wedge}} + 135.730345312^{\wedge} \\
& -0.00205^{\wedge} - 0.0010954451150103322^{\wedge} H - 0.04^{\wedge} + 1.^{\wedge} c4L \text{Cb}^{4.^{\wedge}} \\
& \bar{a}^{-1.41434649220055^{\wedge} \$ \frac{\text{ABT}^5}{-hb+x4+ \text{ABT} x2 x4} \cdot \frac{\text{ABT}}{x1} + \frac{0.006^{\wedge}}{H100.^{\wedge} + x1L^{0.16}} \\
& J \frac{2.38^{\wedge} \text{ABT}}{\text{Cb}} + \frac{\text{ABT}}{\text{Cm}} x1 J 0.453^{\wedge} + 0.4425^{\wedge} \text{Cb} - 0.2862^{\wedge} \text{Cm} + \\
& 0.3696^{\wedge} \text{Cw} - \frac{0.003467^{\wedge} x2}{x4} Hx2 + 2.^{\wedge} x4LN \\
& x5^{2.^{\wedge}} + 569.2916975592^{\wedge} \text{ABT}^{1.5^{\wedge}} \bar{a}^{-\frac{0.566326570612241^{\wedge}}{-1.5 \text{hb} + x4} \frac{\text{ABT}}{x1}} \\
& 1x5^{\wedge} | I' | - 2.45175^{\wedge} \cdot \frac{\text{ABT}}{\text{ABT}} - 9.807^{\wedge} \text{hb} + 9.807^{\wedge} x4 + \\
& 0.03969110399999999^{\wedge} x5^{2.^{\wedge}} \text{MM}^{\wedge} 3.^{\wedge} \\
& 13.779184373405185^{\wedge} + 1.^{\wedge} 1x5^{\wedge} | I' | - 2.45175^{\wedge} \cdot \frac{\text{ABT}}{\text{ABT}} - 9.807^{\wedge} \text{hb} + \\
& 9.807^{\wedge} x4 + 0.03969110399999999^{\wedge} x5^{2.^{\wedge}} \text{MM}^{\wedge} 2.^{\wedge} \text{M} + \\
& 10.179775898399999^{\wedge} 0.93^{\wedge} + \frac{H1.^{\wedge} - \text{Cpl}^{0.60247}}{H1.^{\wedge} - \text{Cpl}^{0.60247}} 0.487118^{\wedge} \\
& H1.^{\wedge} + 0.011^{\wedge} \text{CsternL} \frac{1.^{\wedge} - \text{Cp} + \frac{0.121563^{\wedge}}{-1.^{\wedge} + 4.^{\wedge} \text{Cp}} \\
& J \frac{x^2}{x1}^{1.06806^{\wedge}} J \frac{x1^{2.^{\wedge}}}{\text{Cb} x2 x4}^{0.36486^{\wedge}} J \frac{x^4}{x1}^{0.46106^{\wedge}} \\
& J \frac{2.38^{\wedge} \text{ABT}}{\text{Cb}} + \frac{\text{ABT}}{\text{Cm}} x1 J 0.453^{\wedge} + 0.4425^{\wedge} \text{Cb} - 0.2862^{\wedge} \text{Cm} + \\
& 0.3696^{\wedge} \text{Cw} - \frac{0.003467^{\wedge} x2}{x4} Hx2 + 2.^{\wedge} x4LN x5^{2.^{\wedge}} \\
& H3.6363748627922092^{\wedge} + 0.43429448190325176^{\wedge} \\
& \text{Log}@x1 x5DL^{\wedge} 2.^{\wedge} \frac{\text{ABT}}{\text{ABT}}^{0.775^{\wedge}} -
\end{aligned}$$

$$3.090765690163143 \cdot 10^{-10} \left[\frac{1}{90} - \frac{1}{1.37565} \right] + 2.236662295036503 \cdot 10^{10}$$

$$c^{7.78613} Cb \bar{a} - 1.41434649220055$$

$$\& \left[\frac{ABT^{1.5}}{-hb + x4 + \frac{ABT}{x2 x4}} + \frac{1}{x1} \right]^{1.9}$$

$$\left[5.081833302662383 \right] - c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4}$$

$$\frac{1.75254 \cdot Cb \cdot x2 \cdot x4}{H Cb \cdot x1 \cdot x2 \cdot x4} \frac{w}{\{ \}} + 0 \cdot \bar{a} - \frac{13.052161110505605}{x1}$$

$$\text{CosB} \left[\frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{x1} \right]$$

$$x1 \cdot x2 \cdot J1 - \frac{0.8 \cdot AT}{Cm \cdot x2 \cdot x4} \cdot x4 \cdot J \frac{1.07961}{x2} +$$

$$135.730345312 \cdot AT \cdot c6 \cdot x5^2 + 135.730345312$$

$$\left[-0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1 \cdot c4L Cb^4 \right]$$

$$\bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{-hb + x4 + \frac{ABT}{x2 x4}} \right] \cdot \frac{1}{x1} + \frac{0.006}{H100 + x1^{0.16}}$$

$$\frac{2.38 \cdot ABT}{Cb} + \frac{1}{Cm} \cdot x1 \cdot J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm +$$

$$0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} \cdot H \cdot x2 + 2 \cdot x4 \cdot L \cdot x5^2 +$$

$$\left[569.2916975592 \cdot ABT^{1.5} \bar{a} - \frac{0.56622662012246}{1.37565} \right] \cdot \frac{1}{x5} \cdot |' | - 2.45175 \cdot \frac{1}{ABT} -$$

$$9.807 \cdot hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MMM}^3$$

$$13.779184373405185 + 1 \cdot |x5' |' | - 2.45175 \cdot \frac{1}{ABT} - 9.807 \cdot hb +$$

$$9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MMM}^2 \cdot M +$$

$$\left[10.179775898399999 \right] \cdot 0.93 + \frac{1}{H1} - \frac{1}{Cpl^{0.60247}} \left[0.487118 \right]$$

$$H1 + 0.011 \cdot CsternL \left[\frac{1}{1} - Cp + \frac{0.121563}{-1 \cdot +4 \cdot Cp} \right]$$

$$\begin{aligned}
& \left(\frac{1.06806}{x^2} \right) \left(\frac{0.36486}{x^2} \right) \left(\frac{0.46106}{x^4} \right) \left(\frac{2.38}{C_b} \right) \left(\frac{ABT}{C_b} \right) + \left(\frac{0.003467}{x^4} \right) \left(\frac{0.4425}{C_b} \right) - 0.2862 C_m + \\
& 0.3696 C_w - \left(\frac{0.003467}{x^4} \right) H x^2 + 2. \left(\frac{0.003467}{x^4} \right) x^5 \left(\frac{0.003467}{x^4} \right) \\
& H 3.6363748627922092 + 0.43429448190325176 \text{ Log} x \left(\frac{0.003467}{x^4} \right)^2 \\
& 40896.14657063999 + 0.601404 N t d x^1 x^2 - \\
& 0.02159136 \\
& x^1 \\
& x^2 \\
& x^3 + C_b \\
& H - 1512.1065349199998 + \\
& 0.19942607999999998 x^1 x^2 x^3 + \\
& 1.03 \left(\frac{0.6197720682895518}{x^1} \right) H x^1 x^2 x^3 \left(\frac{0.6197720682895518}{x^1} \right)^{0.724} + \\
& 0.05705477170296265 H 1. + 0.49532 C b l \\
& \left(\frac{1.}{x^1} \right) + 0.000928 J - 8.3 + \left(\frac{1.691}{x^3} \right) \\
& H x^1 x^2 x^3 \left(\frac{1.003}{x^1} \right) + 0.0011232166043994344 \\
& \left(\frac{2.2366662295036503}{x^5} \right) * 10 c^{7.78613} C b \\
& \left(\frac{1.57565}{x^5} \right) H 90. - h a l \\
& \left(\frac{1.5}{x^5} \right) - 1.41434649220055 \& \left(\frac{ABT^{1.5}}{-h b + x^4 + ABT x^2 x^4} \right) + \\
& \left(\frac{5.081833302662383}{x^1} \right) - c 16 - \left(\frac{4.79323}{x^1} \right) \left(\frac{x^2}{x^1} \right) + \\
& \left(\frac{0.0140407}{x^4} \right) x^1 - \left(\frac{1.75254}{H C_b x^1 x^2 x^4} \right) \left(\frac{C_b x^2 x^4}{x^1} \right) \\
& - \left(\frac{12.953161110805605}{x^1} \right) \\
& 0. \bar{a} \left(\frac{1.295}{x^1} \right) \text{Cos} B \\
& - 13.34248601399447 + 53.59231882287779 C p \\
& \left(\frac{1.295}{x^1} \right)
\end{aligned}$$

$$\begin{aligned}
& x^1 x^2 J_1 - \frac{0.8 \text{ AT}}{C_m x^2 x^4} x^4 J_1 + \frac{1.07961}{x^2} + \\
& 135.730345312 \text{ AT } c_6 x^5 + 135.730345312 \\
& -0.00205 - 0.0010954451150103322 \text{ H} - 0.04 + 1. c_4 L C_b^4 \\
& \bar{a}^{-1.41434649220055} \frac{\text{AT}^5}{-hb+x^4 \text{ ABT}^2 x^4} \cdot \frac{1}{x^1} + \frac{0.006}{H100. + x^{11} 0.16} \\
& J_{C_b} \frac{2.38 \text{ ABT}}{C_b} + C_m x^1 J_0.453 + 0.4425 C_b - 0.2862 C_m + \\
& 0.3696 C_w - \frac{0.003467 x^2}{x^4} H x^2 + 2. x^4 L N \\
& x^5 + 569.2916975592 \text{ ABT}^{1.5} \bar{a}^{-0.6632963703213} \\
& l x^5 \text{ I}' \text{ I} - 2.45175 \text{ ABT} - 9.807 \text{ hb} + 9.807 x^4 + \\
& 0.03969110399999999 x^5 \text{ I}^3 \\
& 13.779184373405185 + 1. l x^5 \text{ I}' \text{ I} - 2.45175 \text{ ABT} - 9.807 \text{ hb} + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \text{ I}^2 \\
& 10.179775898399999 \text{ I}^{0.93} + \frac{0.487118}{H1. - C_p L^{0.60247}} \\
& H1. + 0.011 C_{stern} \frac{1. - C_p + C_p}{1. + C_p}^{0.121563} \\
& J_{x^1} \frac{1.06806}{x^1} J_{C_b} \frac{x^1 2.}{C_b x^2 x^4} \frac{0.36486}{x^1} J_{x^1} \frac{0.46106}{x^1} \\
& J_{C_b} \frac{2.38 \text{ ABT}}{C_b} + C_m x^1 J_0.453 + 0.4425 C_b - 0.2862 C_m + \\
& 0.3696 C_w - \frac{0.003467 x^2}{x^4} H x^2 + 2. x^4 L N x^5 \\
& H3.6363748627922092 + 0.43429448190325176 \\
& \text{Log} @ x^1 x^5 L^2 \cdot \frac{1}{x^1} \frac{1}{x^1}^{0.775} + \\
& 0.00041414026809651473 \frac{1}{H90. - h a l^{1.37565}} \frac{1}{x^1} 2.236662295036503 \cdot *^{\wedge} 10 c_7^{3.78613}
\end{aligned}$$

$$\begin{aligned}
& Cb \bar{a}^k - 1.41434649220055 \cdot \frac{ABT^{1.5}}{-hb + x4 + ABT^2 x2 x4} + \frac{1}{x1^{1.9}} \\
& \int_k 5.081833302662383 \int_k -c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \\
& \frac{1.75254 \cdot Cb x2 x4}{HCb x1 x2 x4} + 0. \bar{a} \frac{-12.95314110595605}{x1^{2.9}} \\
& CosB = \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{x1} \\
& x2 J1. - \frac{0.8 \cdot AT}{Cm x2 x4} x4 J \frac{1.07961}{x2} + 135.730345312 \cdot AT c6 x5^{2.} + \\
& 135.730345312 \int_k -0.00205 - 0.0010954451150103322 \cdot H - 0.04 \cdot 1. \cdot c4L \\
& Cb^4 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^{1.5}}{-hb+x4+ABT^2 x2 x4} \cdot \frac{1}{x1} + \frac{0.006}{H100. + x1L^{0.16}} \\
& J \frac{2.38 \cdot ABT}{Cb} + \frac{1}{Cm} x1 J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} Hx2 + 2. \cdot x4LN x5^{2.} + \\
& \int_k 569.2916975592 \cdot ABT^{1.5} \bar{a} \frac{-0.006226666666666667}{x1} \cdot \frac{1}{x5} \cdot | - 2.45175 \cdot \frac{1}{ABT} - \\
& 9.807 \cdot hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot \frac{1}{x1} \\
& 13.779184373405185 + 1. \cdot |x5 \cdot | - 2.45175 \cdot \frac{1}{ABT} - 9.807 \cdot hb + \\
& 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot \frac{1}{x1} \\
& \int_k 10.179775898399999 \int_k 0.93 + \frac{1}{H1. - Cpl} \frac{1}{0.60247} \int_k 0.487118 \\
& H1. + 0.011 \cdot Csternl \int_k \frac{1}{1. - Cp + \frac{1}{-1. + 4. Cp}} \frac{0.121563}{x1} \\
& J \frac{x2}{x1} \frac{1.06806}{x1} \int_k \frac{x1^{2.}}{Cb x2 x4} \frac{0.36486}{x1} \int_k \frac{x4}{x1} \frac{0.46106}{x1} \\
& J \frac{2.38 \cdot ABT}{Cb} + \frac{1}{Cm} x1 J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} Hx2 + 2. \cdot x4LN x5^{2.}
\end{aligned}$$

$$\begin{aligned}
& 3.6363748627922092^{\wedge} + 0.43429448190325176^{\wedge} \text{Log}x1 \text{ x5} \text{L}^{2.} \\
& 4.20862.238499999996^{\wedge} \text{ x3} + \text{H}12.^{\wedge} \text{H} - 828.3304293599999^{\wedge} + 0.601404^{\wedge} \text{Ntd} \text{ x1} \text{ x2} - \\
& \quad 0.02159136^{\wedge} \text{ x1} \text{ x2} \text{ x3} + \\
& \quad \text{Cb} \text{H} - 1512.1065349199998^{\wedge} + 0.19942607999999998^{\wedge} \text{ x1} \text{ x2} \text{ x3} \text{L} \\
& \quad \text{HH} - 82.6702^{\wedge} + 0.050117^{\wedge} \text{Ntd} \text{ x1} \text{ x2} \text{L} \text{H}1.83^{\wedge} + 1.22^{\wedge} \text{Ntd} + \text{x3} \text{L} + \\
& \quad \text{H} - 0.0918^{\wedge} + 0.8479^{\wedge} \text{Cb} \text{L} \text{H} - 148.6129^{\wedge} + 0.0196^{\wedge} \text{ x1} \text{ x2} \text{ x3} \text{L} \\
& \quad \text{H}1.83^{\wedge} + \text{H}2.033333333333333^{\wedge} - 0.813333333333332^{\wedge} \text{Cb} \text{L} \\
& \quad \text{IntegerPart}0.4098360655737705^{\wedge} \text{H} - 1.83^{\wedge} + \text{x3} \text{L} \text{L} \text{L} \text{L} \cdot \\
& \quad \text{H} - 828.3304293599999^{\wedge} - 1512.1065349199998^{\wedge} \text{Cb} + 0.601404^{\wedge} \text{Ntd} \text{ x1} \text{ x2} - \\
& \quad 0.02159136^{\wedge} \text{ x1} \text{ x2} \text{ x3} + \\
& \quad 0.19942607999999998^{\wedge} \text{Cb} \text{ x1} \text{ x2} \text{ x3} \text{L} - \\
& \quad 0.00043983364370304626^{\wedge} - 435.41364296081287^{\wedge} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{0.724^{\wedge}} - \\
& \quad 40.083164870667126^{\wedge} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} - \\
& \quad 0.01842450571162964^{\wedge} \text{Cb} \\
& \quad \int 1077.5862068965514^{\wedge} + 1.^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} \\
& \quad \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} - \\
& \quad 0.037197176999979084^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} + \\
& \quad \int - 1458.6357039187228^{\wedge} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{0.724^{\wedge}} + \\
& \quad 1.^{\wedge} \text{ x1} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{0.724^{\wedge}} - 64.64612830341193^{\wedge} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} + \\
& \quad 0.00010854318961127322^{\wedge} \text{Cb} \int - 295002.5735002021^{\wedge} - \\
& \quad 273.76238820818764^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} + 1077.5862068965519^{\wedge} \\
& \quad \frac{\text{x1}}{\text{x3}} \text{J}^{2.} + 1.^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} \int \frac{\text{x1}}{\text{x3}} \text{J}^{2.} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} - \\
& \quad 0.05999160706556627^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} - \\
& \quad 0.17171627830593794^{\wedge} \int \frac{\text{x1}}{\text{x3}} \text{J}^{2.} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} + \\
& \quad 0.00009285950878661341^{\wedge} \text{Cb}^2 \int 1077.5862068965514^{\wedge} + \\
& \quad 1.^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} \int \frac{\text{x1}}{\text{x3}} \text{J}^{2.} \text{Hx}1 \text{ x2} \text{ x3} \text{L}^{1.003^{\wedge}} - \\
& \quad 0.00015935270626791042^{\wedge} \text{J} - 8.3^{\wedge} + \frac{\text{x1}}{\text{x3}} \text{J}^{1.691^{\wedge}} \int \frac{\text{x1}}{\text{x3}} \text{J}^{2.}
\end{aligned}$$

$$Hx1 x2 x3L^{1.003} - 1.2362609499624329`$$

$$x5 - Cm H90. - hal^{1.37565} 1.78933298360292` *^10 c7^{3.78613} Cb$$

$$\bar{a}^{\wedge} - 1.41434649220055` & \text{ABT}^{1.5} - hb - x4 - \text{ABT} x2 x4$$

$$5.081833302662383` c16 -$$

$$24.358395841320416` x2 + x1$$

$$0.07135249685269171` x1 - x4$$

$$8.906116136247933` Cb x2 x4 + HCb x1 x2 x4L^{0.666666666666667}$$

$$0. \bar{a} \text{Cos} \beta$$

$$-13.34248601399447` + 53.59231882287779` Cn$$

$$x1 J^{1.07961} H1. \text{AT} - 1.25` Cm x2 x4L +$$

$$135.730345312` AT c6 x5^{2} + 135.730345312`$$

$$-0.00205` - 0.0010954451150103322` H - 0.04` + 1.` c4L$$

$$Cb^{4.} \bar{a} - 1.41434649220055` \text{ABT}^{1.5} - hb - x4 - \text{ABT} x2 x4$$

$$x1 + H100. + x1L^{1.15} \text{ABT}^{2.38} Cb +$$

$$Cm x1 J0.453` + 0.4425` Cb - 0.2862` Cm +$$

$$0.3696` Cw - \frac{0.003467` x2}{x4} Hx2 + 2.` x4LN$$

$$x5^{2.} + 569.2916975592` \text{ABT}^{1.5} \bar{a} - \text{ABT}^{1.5} hb - x4$$

$$lx5' l' l - 2.45175` \text{ABT} - 9.807` hb + 9.807` x4 +$$

$$\begin{aligned}
& 0.03969110399999999 \cdot x^5 \cdot \text{MM}^3 \\
& 13.779184373405185 \cdot 1 \cdot \text{Ix5} \cdot \text{I} \cdot \text{I} - 2.45175 \cdot \text{ABT} - 9.807 \cdot \text{hb} + 9.807 \cdot x^4 + \\
& 0.03969110399999999 \cdot x^5 \cdot \text{MM}^2 \cdot \text{M} + \\
& 10.179775898399999 \cdot 0.93 + \text{H1} \cdot \text{Cpl}^{0.60247} \\
& 0.487118 \cdot \text{H1} \cdot \text{CsternL} \\
& \text{I} \cdot \text{Cp} + \text{J} \cdot \frac{x^2}{x1} \cdot 1.06806 \\
& \text{Cb} \cdot x^2 \cdot x^4 \cdot \text{J} \cdot \frac{x^4}{x1} \cdot 0.36486 \cdot \text{J} \cdot \frac{x^4}{x1} \cdot 0.46106 \cdot \text{J} \cdot \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \\
& \text{Cm} \cdot x1 \cdot \text{J} \cdot 0.453 + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + \\
& 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x^2}{x^4} \cdot \text{Hx2} + 2 \cdot x^4 \cdot \text{LN} \cdot x^5 \\
& \text{H3.6363748627922092} + 0.43429448190325176 \\
& \text{Log} \cdot x1 \cdot x^5 \cdot \text{DL}^2 \cdot \text{V}^{\wedge 0.775} - 0.7891027340185741 \\
& x^5 \cdot \text{Cm} \cdot \text{H90} \cdot \text{hal}^{1.37565} \cdot 1.78933298360292 \cdot *^{\wedge 10} \cdot c^{7^{3.78613}} \cdot \text{Cb} \\
& \tilde{a}^{\wedge 3} - 1.41434649220055 \cdot \& \cdot \frac{\text{ABT}^{1.5}}{\text{hb} - x^4 - \text{ABT} \cdot x^2 \cdot x^4} - \\
& \frac{5.081833302662383 \cdot c^{16}}{\text{I} \cdot \frac{x^2}{x1} \cdot 0.9} - \frac{24.358395841320416 \cdot x^2}{x1 \cdot \frac{x^2}{x1} \cdot 0.9} + \\
& \frac{0.07135249685269171 \cdot x^1}{x^4 \cdot \frac{x^2}{x1} \cdot 0.9} - \\
& \frac{8.906116136247933 \cdot \text{Cb} \cdot x^2 \cdot x^4}{\text{HCb} \cdot x1 \cdot x^2 \cdot x^4 \cdot 0.666666666666667 \cdot \frac{x^2}{x1} \cdot 0.9} + \\
& 0 \cdot \tilde{a} \cdot \frac{x^2}{x1} \cdot \text{CosB}
\end{aligned}$$

$$\begin{aligned}
& -13.34248601399447^{\wedge} + 53.59231882287779^{\wedge} \text{Cp} \\
& x1 \text{J} \frac{x4}{x2}^{1.07961} \text{H1.}^{\wedge} \text{AT} - 1.25^{\wedge} \text{Cm} x2 x4 \text{L} + \\
135.730345312^{\wedge} \text{AT} c6 x5^{2.} + 135.730345312^{\wedge} \\
& -0.00205^{\wedge} - 0.0010954451150103322^{\wedge} \text{H} - 0.04^{\wedge} + 1.^{\wedge} c4 \text{Cb}^{4.} \\
& \bar{a}^{-1.41434649220055^{\wedge} \$ \frac{\text{ABT}^{1.5}}{\text{hb} - x4 - \text{ABT} x2 x4} \cdot \frac{\text{H1.}^{\wedge}}{x1} + \frac{0.006^{\wedge}}{\text{H100.}^{\wedge} + x1 \text{L}^{0.16}} \\
& \text{J} \frac{2.38^{\wedge} \text{ABT}}{\text{Cb}} + \frac{\text{H1.}^{\wedge}}{\text{Cm}} x1 \text{J} 0.453^{\wedge} + 0.4425^{\wedge} \text{Cb} - 0.2862^{\wedge} \text{Cm} + \\
& 0.3696^{\wedge} \text{Cw} - \frac{0.003467^{\wedge} x2}{x4} \text{Hx2} + 2.^{\wedge} x4 \text{LN} \\
& x5^{2.} + 569.2916975592^{\wedge} \text{ABT}^{1.5} \bar{a}^{-\frac{0.566326570612241^{\wedge}}{\text{ABT}^{1.5} \text{hb} - x4}} \\
& \text{Ix5}^{\wedge} \text{I}^{\wedge} \text{I} - 2.45175^{\wedge} \cdot \frac{\text{H1.}^{\wedge}}{\text{ABT}} - 9.807^{\wedge} \text{hb} + 9.807^{\wedge} x4 + \\
& 0.03969110399999999^{\wedge} x5^{2.} \text{MM}^{\wedge} 3. \\
13.779184373405185^{\wedge} + 1.^{\wedge} \text{Ix5}^{\wedge} \text{I}^{\wedge} \text{I} - 2.45175^{\wedge} \cdot \frac{\text{H1.}^{\wedge}}{\text{ABT}} - 9.807^{\wedge} \text{hb} + \\
& 9.807^{\wedge} x4 + 0.03969110399999999^{\wedge} x5^{2.} \text{MM}^{\wedge} 2. \\
10.179775898399999^{\wedge} \text{J} 0.93^{\wedge} + \frac{\text{H1.}^{\wedge} - \text{Cpl}^{0.60247}}{\text{H1.}^{\wedge} - \text{Cp} + \frac{\text{H1.}^{\wedge}}{\text{Cp}}} 0.487118^{\wedge} \\
& \text{H1.}^{\wedge} + 0.011^{\wedge} \text{CsternL} \frac{\text{H1.}^{\wedge}}{\text{I.}^{\wedge} - \text{Cp} + \frac{\text{H1.}^{\wedge}}{\text{Cp}}} 0.121563^{\wedge} \\
& \text{J} \frac{x2}{x1}^{1.06806} \text{J} \frac{x1^{2.}}{\text{Cb} x2 x4}^{0.36486} \text{J} \frac{x4}{x1}^{0.46106} \\
& \text{J} \frac{2.38^{\wedge} \text{ABT}}{\text{Cb}} + \frac{\text{H1.}^{\wedge}}{\text{Cm}} x1 \text{J} 0.453^{\wedge} + 0.4425^{\wedge} \text{Cb} - 0.2862^{\wedge} \text{Cm} + \\
& 0.3696^{\wedge} \text{Cw} - \frac{0.003467^{\wedge} x2}{x4} \text{Hx2} + 2.^{\wedge} x4 \text{LN} x5^{2.} \\
& \text{H3.6363748627922092}^{\wedge} + 0.43429448190325176^{\wedge} \\
& \text{Log} @ x1 x5 \text{DL}^{\wedge} 2. \frac{\text{H1.}^{\wedge}}{\text{Cm}}^{\wedge} 0.775^{\wedge} +
\end{aligned}$$

$$3.090765690163143 \cdot 10^{-10} \int_0^1 \frac{1}{\sqrt{1-x^2}} dx - \frac{1}{2} \int_0^1 \frac{1}{\sqrt{1-x^2}} dx + 2.2366662295036503 \cdot 10^{-10}$$

$$c^{7.78613} \text{Cb} \bar{a} - 1.41434649220055$$

$$\frac{1}{\sqrt{1-x^2}} + \frac{1}{\sqrt{1-x^2}}$$

$$\int_0^1 \frac{1}{\sqrt{1-x^2}} dx - c16 - \frac{4.79323 \cdot x^2}{x1} + \frac{0.0140407 \cdot x1}{x4}$$

$$\frac{1.75254 \cdot \text{Cb} \cdot x^2 \cdot x4}{\sqrt{1-x^2}} + 0 \cdot \bar{a}$$

$$\text{CosB} = \frac{-13.34248601399447 + 53.59231882287779 \cdot \text{Cp}}{\sqrt{1-x^2}}$$

$$x1 \cdot x2 \cdot \text{J1} - \frac{0.8 \cdot \text{AT}}{\text{Cm} \cdot x2 \cdot x4} \cdot x4 \cdot \frac{1.07961}{x2} +$$

$$135.730345312 \cdot \text{AT} \cdot c6 \cdot x5^2 + 135.730345312$$

$$\int_0^1 \frac{1}{\sqrt{1-x^2}} dx - 0.00205 - 0.0010954451150103322 \cdot \text{H} - 0.04 + 1 \cdot c4 \cdot \text{Cb}^4$$

$$\bar{a} - 1.41434649220055 \cdot \frac{1}{\sqrt{1-x^2}} + \frac{0.006}{\sqrt{100 + x1^{0.16}}}$$

$$\frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \frac{1}{\text{Cm}} \cdot x1 \cdot \text{J0.453} + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} +$$

$$0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x2}{x4} \cdot \text{H} \cdot x2 + 2 \cdot x4 \cdot \text{LN} \cdot x5^2 +$$

$$\int_0^1 \frac{1}{\sqrt{1-x^2}} dx - 569.2916975592 \cdot \text{ABT}^{1.5} \cdot \bar{a} - \frac{1}{\sqrt{1-x^2}} \cdot \text{I} \cdot x5 \cdot \text{I} - 2.45175 \cdot \text{ABT} -$$

$$9.807 \cdot \text{hb} + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^3$$

$$13.779184373405185 + 1 \cdot \text{I} \cdot x5 \cdot \text{I} - 2.45175 \cdot \text{ABT} - 9.807 \cdot \text{hb} +$$

$$9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^2 \cdot \text{M} +$$

$$\int_0^1 \frac{1}{\sqrt{1-x^2}} dx - 10.179775898399999 \cdot 0.93 + \frac{1}{\sqrt{1-x^2}} - \text{Cpl}^{0.60247} \cdot 0.487118$$

$$\text{H1} + 0.011 \cdot \text{CsternL} \cdot \frac{1}{\sqrt{1-x^2}} - \text{Cp} + \frac{0.121563}{-1 + 4 \cdot \text{Cp}}$$

$$\begin{aligned}
& \frac{1.06806}{x^2} + \frac{0.36486}{x^2} + \frac{0.46106}{x^4} \\
& \frac{2.38}{C_b} \text{ABT} + \frac{0.003467}{x^4} x^2 + 2. \cdot x^4 \ln x^5 \\
& 0.3696 C_w - \frac{0.003467}{x^4} x^2 + 2. \cdot x^4 \ln x^5 \\
& 3.6363748627922092 + 0.43429448190325176 \log_{10} x^5
\end{aligned}$$

$$40896.14657063999 + 0.601404 \text{Ntd} x^1 x^2 -$$

$$0.02159136$$

$$x^1$$

$$x^2$$

$$x^3 + C_b$$

$$1512.1065349199998 +$$

$$0.19942607999999998 x^1 x^2 x^3 +$$

$$1.03 \cdot 0.6197720682895518 \ln x^1 x^2 x^3^{0.724} +$$

$$0.05705477170296265 \ln^1 + 0.49532 C_b \ln$$

$$1. + 0.000928 \ln - 8.3 + \frac{1.691}{x^3}$$

$$\ln x^1 x^2 x^3^{1.003} + 0.0011232166043994344$$

$$x^5 \ln^2 - \ln^{1.57565} 2.2366662295036503 \cdot 10^{7.78613} C_b$$

$$\bar{a}^{\ln} - 1.41434649220055 \cdot \frac{\text{ABT}^{1.5}}{hb - x^4 - \text{ABT} x^2 x^4} +$$

$$\frac{5.081833302662383}{x^1} - c16 - \frac{4.79323 x^2}{x^1} +$$

$$\frac{0.0140407 x^1}{x^4} - \frac{1.75254 C_b x^2 x^4}{\ln C_b x^1 x^2 x^4^{0.6666666666666667}}$$

$$0. \bar{a} \cdot \frac{12.953161110805605}{x^1} \cos B$$

$$-13.34248601399447 + 53.59231882287779 \ln C_b$$

$$\begin{aligned}
& x^1 x^2 J^1 - \frac{0.8 \text{ AT}}{C_m x^2 x^4} x^4 J^1 + \frac{1.07961}{x^2} + \\
& 135.730345312 \text{ AT} c^6 x^5^2 + 135.730345312 \\
& -0.00205 - 0.0010954451150103322 \text{ H} - 0.04 + 1. c^4 L C b^4 \\
& \bar{a}^{-1.41434649220055} \frac{\text{ABT}^1}{\text{hb} x^4 \text{ ABT} x^2 x^4} x^1 + \frac{0.006}{\text{H}100. + x^1 L^{0.16}} \\
& J^1 \frac{2.38 \text{ ABT}}{C_b} + C_m x^1 J^0.453 + 0.4425 C_b - 0.2862 C_m + \\
& 0.3696 C_w - \frac{0.003467 x^2}{x^4} \text{H} x^2 + 2. x^4 L N \\
& x^5^2 + 569.2916975592 \text{ ABT}^{1.5} \bar{a}^{-0.6663363636363636} \\
& l x^5 \text{ l} - 2.45175 \text{ ABT} - 9.807 \text{ hb} + 9.807 x^4 + \\
& 0.03969110399999999 x^5^2 \text{ H}^3 \\
& 13.779184373405185 + 1. l x^5 \text{ l} - 2.45175 \text{ ABT} - 9.807 \text{ hb} + \\
& 9.807 x^4 + 0.03969110399999999 x^5^2 \text{ H}^2 \\
& 10.179775898399999 \text{ H}^1 + 0.93 + \frac{0.487118}{\text{H}^1 - C_p L^{0.60247}} \\
& \text{H}^1 + 0.011 \text{ Cstern} \frac{0.121563}{\text{H}^1 - C_p + C_p} \\
& J^1 \frac{1.06806}{x^1} + \frac{x^1^2}{C_b x^2 x^4} \frac{0.36486}{x^1} + \frac{0.46106}{x^1} \\
& J^1 \frac{2.38 \text{ ABT}}{C_b} + C_m x^1 J^0.453 + 0.4425 C_b - 0.2862 C_m + \\
& 0.3696 C_w - \frac{0.003467 x^2}{x^4} \text{H} x^2 + 2. x^4 L N x^5^2 \\
& \text{H}^3.6363748627922092 + 0.43429448190325176 \\
& \text{Log} @ x^1 x^5 L^2 \text{ H}^1 \text{ H}^1 \text{ H}^1 + \\
& 0.00041414026809651473 \frac{0.2366662295036503}{\text{H}^90. - \text{hal}^{1.37565}} * \text{H}^10 c^7^{3.78613}
\end{aligned}$$

$$\begin{aligned}
& Cb \bar{a}^k - 1.41434649220055 \cdot \frac{ABT^{1.5}}{hb - x^4 - ABT x^2 x^4} + \frac{1}{x^1} \\
& \int_k 5.081833302662383 \int_k -c16 - \frac{4.79323 \cdot x^2}{x^1} + \frac{0.0140407 \cdot x^1}{x^4} - \\
& \frac{1.75254 \cdot Cb x^2 x^4}{HCb x^1 x^2 x^4} + 0 \cdot \bar{a} \\
& CosB = \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{x^1} \\
& x^2 J1 \cdot - \frac{0.8 \cdot AT}{Cm x^2 x^4} + \frac{x^4}{x^2} + 135.730345312 \cdot AT c6 x^5^{2 \cdot} + \\
& 135.730345312 \cdot -0.00205 \cdot -0.0010954451150103322 \cdot H - 0.04 \cdot + 1 \cdot c4L \\
& Cb^4 \cdot \bar{a} - 1.41434649220055 \cdot \frac{ABT^{1.5}}{hb - x^4 - ABT x^2 x^4} \cdot \frac{1}{x^1} + \frac{0.006}{H100 \cdot + x^1 L^{0.16}} \\
& \frac{2.38 \cdot ABT}{Cb} + \frac{1}{Cm} x^1 J0.453 \cdot + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x^2}{x^4} Hx^2 + 2 \cdot x^4 L N x^5^{2 \cdot} + \\
& 569.2916975592 \cdot ABT^{1.5} \cdot \bar{a} \cdot \frac{1}{x^5} \cdot | \cdot -2.45175 \cdot \frac{1}{ABT} - \\
& 9.807 \cdot hb + 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5^{2 \cdot} \\
& 13.779184373405185 \cdot + 1 \cdot |x^5 \cdot | \cdot -2.45175 \cdot \frac{1}{ABT} - 9.807 \cdot hb + \\
& 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5^{2 \cdot} \\
& 10.179775898399999 \cdot 0.93 \cdot + \frac{1}{H1 \cdot - Cpl} \cdot 0.487118 \cdot \\
& H1 \cdot + 0.011 \cdot Csternl \cdot \frac{1}{1 \cdot - Cp +} \cdot 0.121563 \cdot \\
& \frac{J x^2}{x^1} \cdot 1.06806 \cdot \frac{x^1}{Cb x^2 x^4} \cdot 0.36486 \cdot \frac{J x^4}{x^1} \cdot 0.46106 \cdot \\
& \frac{2.38 \cdot ABT}{Cb} + \frac{1}{Cm} x^1 J0.453 \cdot + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x^2}{x^4} Hx^2 + 2 \cdot x^4 L N x^5^{2 \cdot}
\end{aligned}$$

$$0.6363748627922092 + 0.43429448190325176 \log_{10} x^{2.0000000000000000}$$

Appendix E

Mathematical Form of the Return on Investment

ROI =

$$\begin{aligned}
 & -1.4 \cdot 6 - 100 \cdot S_s - 381726.88603230263 \cdot Hx1 \ x2 \ x3L^{0.16666666666666666} - \\
 & 71101.39797224934 \cdot Hx1 \ x2 \ x3L^{0.54299999999999999} - 20721.61586909756 \cdot Hx1 \ x2 \ x3L^{0.6516} - \\
 & 16128.36417412454 \cdot Hx1 \ x2 \ x3L^{0.724} - 368.6194233428627 \cdot Hx1 \ x2 \ x3L^{1.003} - \\
 & 0.34207882486217667 \cdot J - 8.3 + \frac{x1}{x3} \cdot Hx1 \ x2 \ x3L^{1.003} - \\
 & 362.23587808118253 \cdot \frac{1}{k} \cdot 1 + 0.000928 \cdot J - 8.3 + \frac{x1}{x3} \cdot Hx1 \ x2 \ x3L^{1.003} \cdot \frac{0.85}{k} + \\
 & x5 \cdot -1.0500811611320248 \cdot 9 + \frac{1}{H90} - \text{hal}^{1.37565} \\
 & \bar{a}^k - 28.836809873393417 \cdot \$ \frac{1}{-5.7 + x4 + 7.463243262818116 \cdot x2 \ x4} - \\
 & \frac{6 \ 387672141474464}{x1} - \frac{24 \ 358395841320416 \cdot x2}{x1} - \\
 & \frac{7 \ 875638056004192 \cdot x2 \ x4}{Hx1 \ x2 \ x4L^{0.6666666666666667}} \cdot \frac{1}{x1} \cdot x1^2 \cdot 17634.127526400003 \cdot \bar{a}^k \\
 & 28.836809873393417 \cdot \$ \frac{1}{-5.7 + x4 + 7.463243262818116 \cdot x2 \ x4} + \\
 & \frac{6 \ 387672141474464}{x1} + \frac{24 \ 358395841320416 \cdot x2}{x1} + \\
 & \frac{7 \ 875638056004192 \cdot x2 \ x4}{Hx1 \ x2 \ x4L^{0.6666666666666667}} \cdot \frac{1}{x1} \cdot \text{hal}^{1.37565}
 \end{aligned}$$

$$H1 \cdot Ntd \ x2 + 0.19318513018584127 \cdot x2 \ x3L - 3.353825505708245 \cdot *^{\wedge}11$$

$$c7^{3.78613} \cdot \bar{a} \left[\frac{0.07135249685269171 \cdot x1}{x4} + 0 \cdot \bar{a} \right] \cdot \cos \left[\frac{24.150700234490834}{x1} \right]$$

$$\frac{x4^{1.07961}}{x2} \cdot H - 334.27762039660064 + 1 \cdot x2 \ x4L +$$

$$9.802448850520182 \cdot *^{\wedge}7 \bar{a} \cdot \left[\frac{-0.1717473344813688}{x4} \right] \cdot |x5 \cdot |' \ H - 74.19790666961431 +$$

$$9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.2} \cdot \text{LIM}^{\wedge} 3 \cdot \bar{a}$$

$$| - 3.779184373405185 - 1 \cdot |x5 \cdot |' \ H - 74.19790666961431 + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.2} \cdot \text{LIM}^{\wedge} 2 \cdot \bar{a} +$$

$$x1 \cdot - 5.4973453844257735 \cdot *^{\wedge}7 + 336840.1257984 \cdot Ntd \ x2 + 65072.50355417907$$

$$x2 \ x3 + \frac{2.1414976827407598 \cdot *^{\wedge}15 \ c7^{3.78613} \cdot \bar{a}^{\wedge}}{H90 \cdot - \text{hal}^{1.37565}}$$

$$- 28.836809873393417 \cdot \$ \cdot \left[\frac{-5.7 \cdot x4 + 7.463243262818116 \cdot x2 \ x4}{x1} \right]$$

$$\frac{6.387672141474464}{x1} - \frac{24.358395841320416 \cdot x2}{x1}$$

$$\frac{0.07135249685269171 \cdot x1}{x4} - \frac{7.875638056004192 \cdot x2 \ x4}{Hx1 \ x2 \ x4L^{0.666666666666667}}$$

$$0 \cdot \bar{a} \cdot \cos \left[\frac{24.150700234490834}{x1} \right] \cdot \frac{x4^{1.07961}}{x2}$$

$$\frac{6.406344762775322 \cdot *^{\wedge}12 \ c7^{3.78613} \cdot \bar{a}^{\wedge}}{H90 \cdot - \text{hal}^{1.37565}}$$

$$- 28.836809873393417 \cdot \$ \cdot \left[\frac{-5.7 \cdot x4 + 7.463243262818116 \cdot x2 \ x4}{x1} \right]$$

$$\frac{6.387672141474464}{x1} - \frac{24.358395841320416 \cdot x2}{x1}$$

$$\frac{0.07135249685269171 \cdot x1}{x4} - \frac{7.875638056004192 \cdot x2 \ x4}{Hx1 \ x2 \ x4L^{0.666666666666667}}$$

$$0. \bar{a} \left[\frac{-12.85314110505666}{x^1} \right] \cos B \left[\frac{24.150700234490834}{x^1} \right] x^2 x^4 J \left[\frac{x^4}{x^2} \right]^{1.07961} +$$

$$\sqrt[3]{5.13174113955004} \cdot \bar{a} \left[\frac{-0.171723344313668}{x^4} \right] |x^5 \cdot |' \text{H} - 74.19790666961431 \cdot +$$

$$9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{LMM}^{\wedge} 3 \cdot "$$

$$| - 3.779184373405185 \cdot - 1. \cdot |x^5 \cdot |' \text{H} - 74.19790666961431 \cdot +$$

$$9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{LMM}^{\wedge} 2 \cdot "$$

$$\text{H}104.1833333333332 \cdot + 0.28061479207009726 \cdot x^5 + x^1 \text{H}5.454166666666667 \cdot +$$

$$\text{H}0.0374 \cdot + 0.0001392138888888889 \cdot \text{Ntd} x^2 +$$

$$0.00002692402183333333 \cdot x^2 x^3 L x^5 L L -$$

$$2.0490723418240729 \cdot \bar{a} \left[\frac{2.2604108721379874}{x^1} \right] \text{H}x^1 x^2 x^3 L^{0.1666666666666666} +$$

$$0.5373968269457794 \cdot x^5 \left[\frac{\text{H}90 \cdot - \text{hal}^{1.3/565}}{x^1} \right]$$

$$\sqrt[3]{1.5466546977017742} \cdot \bar{a} \left[\frac{10 c^{7^{3.78613}}}{x^1} \right] \bar{a} \left[\frac{-28.836809873393417}{x^1} \right]$$

$$\text{\$} \left[\frac{-5.7 \cdot + x^4 + 7.463243262818116 \cdot x^2 x^4}{x^1} \right] -$$

$$\frac{6.387672141474464}{x^1} - \frac{24.358395841320416 \cdot x^2}{x^1} +$$

$$\frac{0.07135249685269171 \cdot x^1}{x^4} -$$

$$\frac{7.875638056004192 \cdot x^2 x^4}{\text{H}x^1 x^2 x^4 L^{0.666666666666667}} +$$

$$0. \bar{a} \left[\frac{-12.85314110505666}{x^1} \right] \cos B \left[\frac{24.150700234490834}{x^1} \right]$$

$$x^1 J \left[\frac{x^4}{x^2} \right]^{1.07961} \text{H} - 334.27762039660064 \cdot + 1. \cdot x^2 x^4 +$$

$$56056.632613855996 \cdot c^6 x^5 \cdot \bar{a} \left[\frac{135.730345312}{x^1} \right] - 0.00205 \cdot +$$

$$\text{H}0.000010018884088099185 \cdot - 0.0002504721022024796 \cdot c^4 L$$

$$\begin{aligned}
& a^{-28.836809873393417} \cdot \frac{1}{x^1} + \\
& \frac{0.006}{100} + x^{1.016} \cdot 191.70788141720897 + \\
& x^{1.07472141154913118} x^2 - \frac{0.0034468327443611183 x^2}{x^4} + \\
& 1.5082155619600681 x^4 x^5 + \\
& 236656.06714975525 a^{-0.1717473314813688} x^5 - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \cdot \ln^3 + \\
& 13.779184373405185 + 1 \cdot x^5 - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \cdot \ln^2 + \\
& 10.179775898399999 \cdot 0.93 + 1.1501585856866496 \\
& \frac{0.3004 + 0.00014938078291814948 x^1}{x^1} \cdot \frac{x^2}{x^1} \cdot 1.06806 \\
& \frac{x^{1.2}}{x^2 x^4} \cdot \frac{x^{0.36486}}{x^4} \cdot \frac{x^{0.46106}}{x^1} \cdot 191.70788141720897 + \\
& x^{1.07472141154913118} x^2 - \frac{0.0034468327443611183 x^2}{x^4} + \\
& 1.5082155619600681 x^4 x^5 \\
& 13.6363748627922092 + 0.43429448190325176 \cdot \log_{x^1} x^{5 \ln^2} \cdot 0.2 \\
& 0.56 - 4.518765561507924 \cdot 2.2604108721379874 \cdot x^1 x^2 x^3 \cdot 1.1666666666666666 + \\
& 0.5373968269457794 \\
& x^5 \cdot \frac{1.5466546977017742 \cdot 10}{x^{1.37565}} \\
& c^{7.78613} a^{-28.836809873393417} \\
& -5.7 + x^4 + 7.463243262818116 x^2 x^4 \\
& \frac{6.387672141474464}{x^1} - \frac{24.358395841320416 x^2}{x^1}
\end{aligned}$$

$$\begin{aligned}
& \frac{0.07135249685269171 \cdot x^1}{x^4 \sqrt{x^2}} - \\
& \frac{7.875638056004192 \cdot x^2 \cdot x^4}{\sqrt{x^1 \cdot x^2 \cdot x^4} \sqrt{x^2}} + \\
& 0. \bar{a} \sqrt{\frac{-12.052161110505605}{x^2}} \cos B \sqrt{\frac{24.150700234490834}{x^2}} \\
& x^1 \sqrt{\frac{x^4}{x^2}} \sqrt{1.07961} \sqrt{H - 334.27762039660064} + 1. \cdot x^2 \cdot x^4 \sqrt{\quad} + \\
& 56056.632613855996 \cdot c^6 \cdot x^5^{2.} + 135.730345312 \sqrt{\quad} - 0.00205 \cdot + \\
& H0.000010018884088099185 \cdot - 0.0002504721022024796 \cdot c^4 L \\
& \bar{a} - 28.836809873393417 \cdot \sqrt{\frac{-5.7 \cdot x^4 + 7.405245202818110 \cdot x^2 \cdot x^4}{x^2}} \cdot \sqrt{\frac{11111}{x^1}} + \\
& \sqrt{\frac{0.006}{H100.} + x^1} \sqrt{191.70788141720897} + \\
& x^1 \sqrt{\frac{0.7472141154913118 \cdot x^2}{k}} - \sqrt{\frac{0.0034468327443611183 \cdot x^2}{x^4}} + \\
& 1.5082155619600681 \cdot x^4 \sqrt{x^5^{2.}} + \\
& \sqrt{\frac{236656.06714975525 \cdot \bar{a}}{k}} \sqrt{\frac{-0.1717732448426386}{1.855 \cdot x^4}} \sqrt{lx^5 \cdot l' \cdot H - 74.19790666961431} + \\
& 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5^{2.} \sqrt{\frac{LMM^3}{k}} \\
& 13.779184373405185 \cdot + 1. \cdot lx^5 \cdot l' \cdot H - 74.19790666961431 \cdot + \\
& 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5^{2.} \sqrt{\frac{LMM^2 \cdot M}{k}} + \\
& \sqrt{\frac{10.179775898399999}{k}} \sqrt{\frac{0.93}{k}} + 1.1501585856866496 \cdot \\
& \sqrt{\frac{0.3004}{k}} + \sqrt{\frac{0.00014938078291814948 \cdot x^1}{k}} \sqrt{\frac{0.121563}{k}} \sqrt{\frac{x^2}{x^1}} \sqrt{1.06806} \\
& \sqrt{\frac{x^1}{x^2 \cdot x^4}} \sqrt{0.36486} \sqrt{\frac{x^4}{x^1}} \sqrt{0.46106} \sqrt{191.70788141720897} + \\
& x^1 \sqrt{\frac{0.7472141154913118 \cdot x^2}{k}} - \sqrt{\frac{0.0034468327443611183 \cdot x^2}{x^4}} + \\
& 1.5082155619600681 \cdot x^4 \sqrt{x^5^{2.}} \sqrt{\quad} \\
& H3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} \cdot x^1 \cdot x^5 \sqrt{\frac{DL^2}{k}} \sqrt{\frac{^0.2}{k}} \sqrt{\frac{^0.2}{k}} \\
& 0.8 \cdot - 90752.88915046849 \cdot x^5 \sqrt{\frac{H90.}{k}} - \sqrt{\frac{\text{hal}^{1.37565}}{k}} \sqrt{1.5466546977017742 \cdot *^{\wedge} 10 \cdot c^7 \cdot 3.78613}
\end{aligned}$$

$$\begin{aligned}
& \bar{a}^k - 28.836809873393417 \cdot \left(-5.7^x + x^4 + 7.463243262818116 \cdot x^2 \cdot x^4 \right) \\
& \frac{6.387672141474464}{x^1} - \frac{24.358395841320416 \cdot x^2}{x^1} + \\
& \frac{0.07135249685269171 \cdot x^1}{x^4} - \frac{7.875638056004192 \cdot x^2 \cdot x^4}{x^1 \cdot x^2 \cdot x^4} + \\
& 0 \cdot \bar{a} \cdot \cos \left(\frac{24.150700234490834}{x^1} \right) \\
& x^1 \cdot \frac{x^4}{x^2} \cdot 1.07961^x - 334.27762039660064^x + 1 \cdot x^2 \cdot x^4 \\
& 56056.632613855996 \cdot c_6 \cdot x^{5^2} + 135.730345312^x \\
& \int_k -0.00205^x + 10.000010018884088099185^x - 0.0002504721022024796 \cdot c_{4L} \\
& \bar{a}^{-28.836809873393417} \cdot \left(-5.7^x + x^4 + 7.463243262818116 \cdot x^2 \cdot x^4 \right) \cdot \frac{0.006^x}{x^1} + \frac{0.006^x}{100 \cdot x^1 \cdot 0.16^x} \\
& \int_k 191.70788141720897^x + x^1 \int_k 0.7472141154913118^x \cdot x^2 - \\
& \frac{0.0034468327443611183 \cdot x^2}{x^4} + 1.5082155619600681 \cdot x^4 \cdot x^{5^2} + \\
& \int_k 236656.06714975525^x \cdot \bar{a}^{-\frac{0.1717473344813688}{-8.55 \cdot x^4}} \cdot |x^5 \cdot l' \cdot H - 74.19790666961431^x + \\
& 9.807^x \cdot x^4 + 0.03969110399999999^x \cdot x^{5^2} \cdot \text{LIM}^3 \cdot \frac{y}{\{}} \\
& 13.779184373405185^x + 1 \cdot |x^5 \cdot l' \cdot H - 74.19790666961431^x + 9.807^x \cdot x^4 + \\
& 0.03969110399999999^x \cdot x^{5^2} \cdot \text{LIM}^2 \cdot \frac{y}{\{}} + \\
& \int_k 10.179775898399999^x \int_k 0.93^x + 1.1501585856866496^x \\
& \int_k \frac{0.3004^x + 0.00014938078291814948 \cdot x^1}{0.121563^x} \\
& \int_k \frac{x^2}{x^1} \cdot 1.06806^x \int_k \frac{x^2}{x^2 \cdot x^4} \cdot 0.36486^x \int_k \frac{x^4}{x^1} \cdot 0.46106^x \\
& \int_k 191.70788141720897^x + x^1 \int_k 0.7472141154913118^x \cdot x^2 - \\
& \frac{0.0034468327443611183 \cdot x^2}{x^4} + 1.5082155619600681 \cdot x^4 \cdot x^{5^2} \cdot \frac{y}{\{}} \\
& H3.6363748627922092^x + 0.43429448190325176^x \cdot \text{Log} @ x^1 \cdot x^{5L^2} \cdot \frac{y}{\{}} \cdot 0.2^x -
\end{aligned}$$

$$1105.3973652551122 \sqrt[k]{x^5} \sqrt[k]{100. - \text{hal}^{1.37585}} 1.5466546977017742 \cdot 10^7 c^{7^{3.78613}}$$

$$\bar{a}^k - 28.836809873393417 \sqrt[k]{-5.7 + x^4 + 7.463243262818116 \sqrt{x^2 x^4}}$$

$$\frac{6.387672141474464 \sqrt[k]{x^1}}{\sqrt[k]{x^1}} - \frac{24.358395841320416 \sqrt[k]{x^2}}{\sqrt[k]{x^1}}$$

$$\frac{0.07135249685269171 \sqrt[k]{x^1}}{x^4 \sqrt[k]{x^1}} - \frac{7.875638056004192 \sqrt[k]{x^2 x^4}}{H x^1 x^2 x^4 \sqrt[k]{x^1}}$$

$$0. \bar{a} \sqrt[k]{x^1} \cos B \frac{24.150700234490834 \sqrt[k]{x^1}}{\sqrt[k]{x^1}}$$

$$x^1 \sqrt[k]{x^4} \sqrt[k]{x^2} H - 334.27762039660064 \sqrt[k]{x^2 x^4} + 1. \sqrt[k]{x^2 x^4}$$

$$56056.632613855996 \sqrt[k]{c^6 x^5} + 135.730345312 \sqrt[k]{c^4}$$

$$\sqrt[k]{-0.00205 + H 0.000010018884088099185 - 0.0002504721022024796 \sqrt[k]{c^4}}$$

$$\bar{a} - 28.836809873393417 \sqrt[k]{-5.7 + x^4 + 7.463243262818116 \sqrt{x^2 x^4}} \cdot \frac{0.006 \sqrt[k]{x^1}}{H 100. + x^1 \sqrt[k]{x^1}}$$

$$\sqrt[k]{191.70788141720897} + x^1 \sqrt[k]{0.7472141154913118 \sqrt{x^2}}$$

$$\frac{0.0034468327443611183 \sqrt[k]{x^2}}{x^4} + 1.5082155619600681 \sqrt[k]{x^4} \sqrt[k]{x^5} +$$

$$\sqrt[k]{236656.06714975525} \bar{a} \sqrt[k]{x^5} \sqrt[k]{H - 74.19790666961431} +$$

$$9.807 \sqrt[k]{x^4} + 0.03969110399999999 \sqrt[k]{x^5} \sqrt[k]{H^3}$$

$$13.779184373405185 \sqrt[k]{x^5} \sqrt[k]{H - 74.19790666961431} + 9.807 \sqrt[k]{x^4} + 0.03969110399999999 \sqrt[k]{x^5} \sqrt[k]{H^2}$$

$$\sqrt[k]{10.179775898399999} \sqrt[k]{0.93} + 1.1501585856866496 \sqrt[k]{x^1}$$

$$\frac{0.3004 + 0.00014938078291814948 \sqrt[k]{x^1}}{0.121563}$$

$$\sqrt[k]{x^2} \sqrt[k]{x^1} \sqrt[k]{x^2 x^4} \sqrt[k]{x^4} \sqrt[k]{x^1}$$

$$\sqrt[k]{191.70788141720897} + x^1 \sqrt[k]{0.7472141154913118 \sqrt{x^2}}$$

$$\frac{0.0034468327443611183 \sqrt[k]{x^2}}{x^4} + 1.5082155619600681 \sqrt[k]{x^4} \sqrt[k]{x^5} +$$

$$\begin{aligned}
& \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}^{\otimes} x1 x50L^{2\cdot} \{ \}^{\wedge} 0.6^{\cdot} + \\
& x5^{3\cdot} \{ \}^{\cdot} 22094.68044196787^{\cdot} \cdot \text{H104.18333333333332}^{\cdot} + 0.28061479207009726^{\cdot} x5 + \\
& \quad x1 \text{H5.454166666666667}^{\cdot} + \text{H0.0374}^{\cdot} + 0.000139213888888889^{\cdot} \text{Ntd} x2 + \\
& \quad \quad 0.00002692402183333333^{\cdot} x2 x3L x5LL + \\
& \text{Hc6H} - 2.3219023308707647^{\cdot} *^{\wedge} 7 - 1.2155535718724327^{\cdot} *^{\wedge} 6 x1LL \cdot \\
& \quad \text{H104.18333333333332}^{\cdot} + 0.28061479207009726^{\cdot} x5 + \\
& \quad \quad x1 \text{H5.454166666666667}^{\cdot} + \text{H0.0374}^{\cdot} + 0.000139213888888889^{\cdot} \text{Ntd} x2 + \\
& \quad \quad \quad 0.00002692402183333333^{\cdot} x2 x3L x5LL - 64667.35739112547^{\cdot} \cdot \\
& \text{HH100.}^{\cdot} + x1L^{0.16} \text{H104.18333333333332}^{\cdot} + 0.28061479207009726^{\cdot} x5 + \\
& \quad \quad x1 \text{H5.454166666666667}^{\cdot} + \text{H0.0374}^{\cdot} + 0.000139213888888889^{\cdot} \text{Ntd} x2 + \\
& \quad \quad \quad 0.00002692402183333333^{\cdot} x2 x3L x5LLL + \\
& \text{JH} - 775658.6682986249^{\cdot} + 1.9391466707465634^{\cdot} *^{\wedge} 7 c4L \\
& \quad \bar{a}^{-28.836809873393417} \cdot \{ \}^{\cdot} \cdot \{ \}^{\cdot} \\
& \quad \text{H748368.816968294}^{\cdot} + 2015.7097421081667^{\cdot} x5 + \\
& \quad \quad x1 \text{H39178.322724823905}^{\cdot} + \\
& \quad \quad \quad \text{H268.65135582736394}^{\cdot} + 1.^{\cdot} \text{Ntd} x2 + 0.19340040026338362^{\cdot} x2 x3L x5LL + \\
& \text{J\bar{a}}^{-28.836809873393417} \cdot \{ \}^{\cdot} x1^{5\cdot 2} \\
& \quad \text{HH0.7300978152007145}^{\cdot} - 18.252445380017864^{\cdot} c4L x2^2 + \\
& \quad \quad \text{H} - 158.27266179359066^{\cdot} + 3956.8165448397667^{\cdot} c4L x2 x4 + \\
& \quad \quad \quad \text{H} - 319.46571484798403^{\cdot} + 7986.642871199604^{\cdot} c4L x4^2 \text{LL}^{\cdot} \\
& \quad \text{Hx4 H748368.816968294}^{\cdot} + 2015.7097421081667^{\cdot} x5 + x1 \text{H39178.322724823905}^{\cdot} + \\
& \quad \quad \quad \text{H268.65135582736394}^{\cdot} + 1.^{\cdot} \text{Ntd} x2 + 0.19340040026338362^{\cdot} x2 x3L x5LLL + \\
& \text{J\bar{a}}^{-28.836809873393417} \cdot \{ \}^{\cdot} x1^{3\cdot 2} \\
& \quad \text{HH13.946039550251086}^{\cdot} - 348.6509887562771^{\cdot} c4L x2^2 + \\
& \quad \quad \text{H} - 3023.2617536187477^{\cdot} + 75581.5438404687^{\cdot} c4L x2 x4 + \\
& \quad \quad \quad x4 \text{H} - 40606.99075359544^{\cdot} - 6102.3076654385^{\cdot} x4 + c4 \\
& \quad \quad \quad \text{H1.0151747688398861}^{\cdot} *^{\wedge} 6 + 152557.6916359625^{\cdot} x4 \text{LLLL}^{\cdot} \\
& \quad \text{Hx4 H748368.816968294}^{\cdot} + 2015.7097421081667^{\cdot} x5 + x1 \text{H39178.322724823905}^{\cdot} + \\
& \quad \quad \quad \text{H268.65135582736394}^{\cdot} + 1.^{\cdot} \text{Ntd} x2 + 0.19340040026338362^{\cdot} x2 x3L x5LLL + \\
& \quad \quad \quad \int x1^2 \int x2^2 \int 149.38794660168824^{\cdot} - \frac{437.23301444396543^{\cdot}}{\text{H100.}^{\cdot} + x1L^{0.16}} - \\
& \quad \quad \quad \frac{5082.833792911098^{\cdot}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}^{\otimes} x1 x50L^{2\cdot} \{ \}^{\cdot}} + \\
& \quad \quad \quad x2 x4 \int - 32384.740039288965^{\cdot} + \frac{94784.60499304089^{\cdot}}{\text{H100.}^{\cdot} + x1L^{0.16}} + \\
& \quad \quad \quad \frac{1.1018710330441^{\cdot} *^{\wedge} 6}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}^{\otimes} x1 x50L^{2\cdot} \{ \}^{\cdot}} + \\
& \quad \quad \quad x4^2 \int - 65367.031864984696^{\cdot} + \frac{191318.1420438576^{\cdot}}{\text{H100.}^{\cdot} + x1L^{0.16}} +
\end{aligned}$$

$$\begin{aligned}
& \frac{2.2240734012598447 \cdot 10^6}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2} \\
& Hx4 H-748368.816968294 - 2015.7097421081667 \cdot x5 + \\
& \quad x1 H-39178.322724823905 + H-268.65135582736394 - \\
& \quad 1. \cdot \text{Ntd} \cdot x2 - 0.19340040026338362 \cdot x2 \cdot x3L \cdot x5LLL + \\
& x1 \int_K \int_K x2^2 \int_K 2853.549439899628 - \frac{8351.852019218422}{H100. + x1L^{0.16}} - \\
& \frac{97090.27972341415}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2} \\
& Hx4 H-748368.816968294 - 2015.7097421081667 \cdot x5 + x1 \\
& \quad H-39178.322724823905 + H-268.65135582736394 - \\
& \quad 1. \cdot \text{Ntd} \cdot x2 - 0.19340040026338362 \cdot x2 \cdot x3L \cdot x5LLL + \\
& \int_K 8.30874280138159 \cdot 10^6 - \frac{2.431827161379977 \cdot 10^7}{H100. + x1L^{0.16}} + \\
& x4 \int_K 1.2486151755172478 \cdot 10^6 - \frac{3.654483440538285 \cdot 10^6}{H100. + x1L^{0.16}} - \\
& \frac{4.248336999625757 \cdot 10^7}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2} - \\
& \int_K 5.2540443817309946 \cdot 10^7 \\
& \int_K \frac{0.3004 + 0.00014938078291814948 \cdot x1^{0.121563}}{x1} \\
& \int_K \frac{x2^{1.06806}}{x1} \int_K \frac{x1^2 \cdot x2^{0.36486}}{x2 \cdot x4} \int_K \frac{x4^{0.46106}}{x1} \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2 - \\
& \frac{2.8269990751042235 \cdot 10^8}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2} - \\
& \int_K 3.496233610708968 \cdot 10^8 \int_K \frac{0.3004 + 0.00014938078291814948 \cdot x1^{0.121563}}{x1} \\
& \int_K \frac{x2^{1.06806}}{x1} \int_K \frac{x1^2 \cdot x2^{0.36486}}{x2 \cdot x4} \int_K \frac{x4^{0.46106}}{x1} \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2 - \\
& H748368.816968294 + 2015.7097421081667 \cdot x5 + \\
& \quad x1 H39178.322724823905 + H268.65135582736394 + \\
& \quad 1. \cdot \text{Ntd} \cdot x2 + 0.19340040026338362 \cdot x2 \cdot x3L \cdot x5LL + \\
& x2 \int_K \int_K 618600.4888788246 - \frac{1.8105380162307061 \cdot 10^6}{H100. + x1L^{0.16}} - \\
& \frac{2.1047504438681956 \cdot 10^7}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^2} -
\end{aligned}$$

$$2.6030073050997764 \cdot x^7$$

$$\int \frac{1}{0.3004 + 0.00014938078291814948 x^1} dx$$

$$\int \frac{x^2}{x^1} dx \quad \int \frac{x^1}{x^2 x^4} dx \quad \int \frac{x^4}{x^1} dx \quad \int \frac{0.46106}{x^1} dx$$

$$H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x^1 x5DL^2 -$$

$$2.7505775458670105 \cdot x^6$$

$$\int \frac{1}{0.3004 + 0.00014938078291814948 x^1} dx$$

$$\int \frac{x^2}{x^1} dx \quad \int \frac{0.0680600000000001}{x^2 x^4} dx \quad \int \frac{x^1}{x^2 x^4} dx \quad \int \frac{x^4}{x^1} dx \quad \int \frac{0.46106}{x^1} dx$$

$$H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x^1 x5DL^2 -$$

$$H748368.816968294 + 2015.7097421081667 x^5 +$$

$$x^1 H39178.322724823905 + H268.65135582736394 +$$

$$1 \cdot \text{Ntd} x^2 + 0.19340040026338362 x^2 x3L x5LL -$$

$$751758.0296718335 \cdot H104.1833333333332 + 0.28061479207009726 x^5 +$$

$$x^1 H5.454166666666667 + H0.0374 + 0.000139213888888889 \cdot \text{Ntd} x^2 +$$

$$0.00002692402183333333 x^2 x3L x5LL$$

$$H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x^1 x5DL^2 L -$$

$$\int \frac{1}{0.3004 + 0.00014938078291814948 x^1} dx$$

$$\int \frac{x^2}{x^1} dx \quad \int \frac{1.06806}{x^2 x^4} dx \quad \int \frac{x^1}{x^2 x^4} dx \quad \int \frac{x^4}{x^1} dx \quad \int \frac{0.46106}{x^1} dx$$

$$H104.1833333333332 + 0.28061479207009726 x^5 +$$

$$x^1 H5.454166666666667 + H0.0374 + 0.000139213888888889 \cdot \text{Ntd} x^2 +$$

$$0.00002692402183333333 x^2 x3L x5LL$$

$$H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x^1 x5DL^2 L -$$

$$\int \frac{1}{0.3004 + 0.00014938078291814948 x^1} dx$$

$$\int \frac{x^2}{x^1} dx \quad \int \frac{2.06806}{x^2 x^4} dx \quad \int \frac{x^1}{x^2 x^4} dx \quad \int \frac{x^4}{x^1} dx \quad \int \frac{0.46106}{x^1} dx$$

$$H748368.816968294 + 2015.7097421081667 x^5 + x^1 H39178.322724823905 +$$

$$H268.65135582736394 + 1 \cdot \text{Ntd} x^2 + 0.19340040026338362 x^2 x3L x5LL$$

$$H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x^1 x5DL^2 L +$$

$$\int \frac{1}{0.3004 + 0.00014938078291814948 x^1} dx$$

$$\begin{aligned}
& x^2 \int \frac{x^2}{x^2 x^4} dx + \int \frac{x^4}{x^1} dx \\
& x^4 \int \frac{x^2}{x^1} dx + 2015.7097421081667 x^5 + \\
& x^1 \int \frac{x^2}{x^1} dx + 268.65135582736394 x^4 + \\
& 1. \int \frac{x^2}{x^1} dx + 0.19340040026338362 x^2 x^3 L x^5 L L \\
& H3.6363748627922092 + 0.43429448190325176 \operatorname{Log} x^1 x^5 L^2 + \\
& 120074.42882860563 \int \frac{x^2}{x^1} dx + 0.3004 + 0.00014938078291814948 x^1 \\
& x^2 \int \frac{x^2}{x^1} dx + 0.0680600000000001 \int \frac{x^2}{x^1} dx + \int \frac{x^4}{x^1} dx + 0.46106 \int \frac{x^4}{x^1} dx \\
& Hx^4 \int \frac{x^2}{x^1} dx + 2015.7097421081667 x^5 + x^1 \int \frac{x^2}{x^1} dx + 268.65135582736394 x^4 + \\
& 1. \int \frac{x^2}{x^1} dx + 0.19340040026338362 x^2 x^3 L x^5 L L \\
& H3.6363748627922092 + 0.43429448190325176 \operatorname{Log} x^1 x^5 L^2 +
\end{aligned}$$

$$7379.218833668243 \int \frac{x^2}{x^1} dx + 0.5429999999999999 x^2 x^3 L^2 +$$

$$2150.5813169097396$$

$$\int \frac{x^2}{x^1} dx + 0.6516 x^2 x^3 L^2 +$$

$$1625.7512793530145$$

$$\int \frac{x^2}{x^1} dx + 0.724 x^2 x^3 L^2 +$$

$$37.157116036323586$$

$$\int \frac{x^2}{x^1} dx + 1.003 x^2 x^3 L^2 +$$

$$0.03448180368170829$$

$$\int \frac{x^2}{x^1} dx + 8.3 + \int \frac{x^1}{x^3} dx + 1.691 x^2 x^3 L^2 +$$

$$\int \frac{x^2}{x^1} dx + 1.003 x^2 x^3 L^2 +$$

$$37.594448069928056$$

$$\int \frac{x^2}{x^1} dx + 1. + 0.000928 \int \frac{x^1}{x^3} dx + \int \frac{x^1}{x^3} dx + 1.691 \int \frac{x^1}{x^3} dx + \int \frac{x^1}{x^3} dx + 1.003 \int \frac{x^1}{x^3} dx + 0.85 \int \frac{x^1}{x^3} dx +$$

$$224864.40317144955$$

$$2.2604108721379874 \int \frac{x^2}{x^1} dx +$$

$$\int \frac{x^2}{x^1} dx + 0.1666666666666666 x^2 x^3 L^2 +$$

$$0.5373968269457794 \int \frac{x^2}{x^1} dx + \int \frac{x^2}{x^1} dx + \int \frac{x^2}{x^1} dx + 90. - \operatorname{hal} \int \frac{x^2}{x^1} dx + 1.5466546977017742 x^2 x^3 L^2 * 10$$

$$c7^{3.78613} \bar{a}^k - 28.836809873393417$$

$$-5.7 + x4 + 7.463243262818116 x2 x4$$

$$\frac{6.387672141474464}{x1} - \frac{24.358395841320416 x2}{x1}$$

$$\frac{0.07135249685269171 x1}{x4}$$

$$\frac{7.875638056004192 x2 x4}{x1 x2 x4}$$

$$0. \bar{a} \cos B \frac{24.150700234490834}{x1}$$

$$x1 \frac{x4}{x2} H - 334.27762039660064 + 1. x2 x4$$

$$56056.632613855996 c6 x5^2 + 135.730345312 - 0.00205 +$$

$$H0.000010018884088099185 - 0.0002504721022024796 c4L$$

$$\bar{a} - 28.836809873393417 \cdot \frac{1}{x1} +$$

$$\frac{0.006}{H100. + x1L} 191.70788141720897 +$$

$$x1 \frac{0.7472141154913118 x2 - 0.0034468327443611183 x2^2}{x4} +$$

$$1.5082155619600681 x4 x5^2 +$$

$$236656.06714975525 \bar{a} \frac{1}{x5} H - 74.19790666961431 +$$

$$9.807 x4 + 0.03969110399999999 x5^2 LMM^3$$

$$13.779184373405185 + 1. x5 H - 74.19790666961431 +$$

$$9.807 x4 + 0.03969110399999999 x5^2 LMM^2 M +$$

$$10.179775898399999 0.93 + 1.1501585856866496$$

$$\frac{0.3004}{x1} + \frac{0.00014938078291814948 x1}{x1} \frac{0.121563 x2}{x1} \frac{1.06806}{x1}$$

$$\frac{x1^2}{x2 x4} \frac{0.36486}{x1} \frac{x4}{x1} \frac{0.46106}{x1} 191.70788141720897 +$$

$$x1 \frac{0.7472141154913118 x2 - 0.0034468327443611183 x2^2}{x4} +$$

$$\begin{aligned}
& 1.5082155619600681 \cdot x^4 x^5 \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x \cdot x^5 \cdot 0.2 \\
& 0.56 + 112.55772170805852 \cdot x^5 \cdot \left(\frac{1}{90} - \frac{1}{81} \right) \cdot 1.5466546977017742 \cdot 10^7 \cdot c^{73.78613} \\
& \bar{a} - 28.836809873393417 \cdot \left(-5.7 + x^4 + 7.463243262818116 \cdot x^2 x^4 \right) \\
& \frac{6.387672141474464}{x^1} - \frac{24.358395841320416 \cdot x^2}{x^1} + \\
& \frac{0.07135249685269171 \cdot x^1}{x^4} - \frac{7.875638056004192 \cdot x^2 x^4}{H x^1 x^2 x^4} + \\
& 0 \cdot \bar{a} \cdot \cos B \cdot \frac{24.150700234490834}{x^1} \\
& x^1 \cdot \frac{x^4}{x^2} \cdot 1.07961 \cdot H - 334.27762039660064 + 1 \cdot x^2 x^4 \\
& 56056.632613855996 \cdot c^6 x^5 + 135.730345312 \\
& -0.00205 + H0.000010018884088099185 - 0.0002504721022024796 \cdot c^4 \\
& \bar{a} - 28.836809873393417 \cdot \left(-5.7 + x^4 + 7.463243262818116 \cdot x^2 x^4 \right) \cdot \frac{0.006}{H100 + x^1} \\
& \int 191.70788141720897 + x^1 \int 0.7472141154913118 \cdot x^2 - \\
& \frac{0.0034468327443611183 \cdot x^2}{x^4} + 1.5082155619600681 \cdot x^4 x^5 \\
& 236656.06714975525 \cdot \bar{a} \cdot \left(\frac{1}{8.55} - \frac{1}{8} \right) \cdot H - 74.19790666961431 + \\
& 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{LIM}^{\wedge} 3 \\
& 13.779184373405185 + 1 \cdot H x^5 \cdot \text{LIM}^{\wedge} 2 + 9.807 \cdot x^4 + \\
& 0.03969110399999999 \cdot x^5 \cdot \text{LIM}^{\wedge} 2 \\
& 10.179775898399999 \cdot 0.93 + 1.1501585856866496 \\
& \frac{0.3004 + 0.00014938078291814948 \cdot x^1}{0.121563} \\
& \frac{x^2}{x^1} \cdot 1.06806 \cdot \frac{x^2}{x^2 x^4} \cdot 0.36486 \cdot \frac{x^4}{x^1} \cdot 0.46106
\end{aligned}$$

$$191.70788141720897 + x \sqrt{0.7472141154913118 x^2 -$$

$$\frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 x^5 \sqrt{\quad}$$

$$3.6363748627922092 + 0.43429448190325176 \operatorname{Log}_{x1} x 50l^2 \sqrt{\quad}^{\sqrt{\quad}} \wedge 0.6 \sqrt{\quad}$$

Appendix F

Mathematical Form of the Resistance

RT =

$$135.730345312 \cdot AT c6 x5^2 - \frac{0.662228354777248 \cdot ABT x5^2}{Cb} + \frac{1.9382293310553598 \cdot ABT x5^2}{Cb \sqrt{100. + x11^{0.16}}} +$$

$$\cdot \frac{0.014154825683162254 \cdot ABT Cb^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2}{k} -$$

$$0.35387064207905633 \cdot ABT c4 Cb^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2 +$$

$$\frac{569.2916975592 \cdot ABT^{1.5} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4}}{k}$$

$$\frac{-2.45175 \cdot ABT - 9.807 \cdot hb + 9.807 \cdot x4 + 0.039691103999999999 \cdot x5^2}{k}$$

$$3. \cdot 13.779184373405185 +$$

$$1. \cdot |x5| \cdot | -2.45175 \cdot ABT - 9.807 \cdot hb + 9.807 \cdot x4 + 0.039691103999999999 \cdot x5^2 |^2 +$$

$$x1^{3-2} \cdot \frac{x2^2}{k} - 0.000020619655732572913 \cdot Cb^4 \cdot \frac{ABT^5}{Cm \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2} +$$

$$0.0005154913933143228 \cdot c4 Cb^4 \cdot \frac{ABT^5}{Cm \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2} +$$

$$x4 \cdot \frac{0.005388349608800421 \cdot Cb^4 \cdot \frac{ABT^5}{Cm \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2}}{k} -$$

$$0.13470874022001053 \cdot c4 Cb^4 \cdot \frac{ABT^5}{Cm \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2} +$$

$$0.005263454088066636 \cdot Cb^5 \cdot \frac{ABT^5}{Cm \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2} -$$

$$0.1315863522016659 \cdot c4 Cb^5 \cdot \frac{ABT^5}{Cm \bar{a}^{-1.41434649220055} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2} -$$

$$0.0034042950508580147 \cdot Cb^4 \cdot Cm^{3-2} \cdot \frac{ABT^5}{hb-x4-ABT x2x4} x5^2 +$$

$$\begin{aligned}
& 0.08510737627145036 \cdot c4 \text{Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} + \\
& 0.004396322329829218 \cdot \text{Cb}^4 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm Cw} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \\
& 0.10990805824573044 \cdot c4 \text{Cb}^4 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm Cw} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} + \\
& x2 \left| \frac{\text{ABT}^{1.5}}{\text{Cm} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \right. \\
& 0.06632338732337661 \cdot c4 \text{Cb}^4 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} + \\
& 0.002631727044033318 \cdot \text{Cb}^5 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \\
& 0.06579317610083295 \cdot c4 \text{Cb}^5 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \\
& 0.0017021475254290074 \cdot \text{Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} + \\
& 0.04255368813572518 \cdot c4 \text{Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} + \\
& 0.002198161164914609 \cdot \text{Cb}^4 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm Cw} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \\
& 0.05495402912286522 \cdot c4 \text{Cb}^4 \cdot \frac{\text{ABT}^{1.5}}{\text{Cm Cw} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} +
\end{aligned}$$

$$x1 \left| \frac{\text{ABT}^{1.5}}{\text{Cm H90.} - \text{hal}^{1.37565}} \right| 1.78933298360292 \cdot *^{\wedge}10 \text{AT} c7^{3.78613} \text{Cb}$$

$$\bar{a}^{\wedge} - 1.41434649220055 \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} +$$

$$\frac{\text{ABT}^{1.5}}{\text{Cm} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} -$$

$$\frac{1.75254 \cdot \text{Cb} x2 x4}{\text{HCb} x1 x2 x4} + 0. \bar{a}^{-12.95314110595606} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}}$$

$$\text{CosB} = \frac{-13.34248601399447}{\text{Cm} \bar{a}} + \frac{53.59231882287779}{\text{Cp}} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} +$$

$$\frac{\text{ABT}^{1.5}}{\text{Cm} \bar{a}}^{-1.41434649220055} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} - \frac{0.002823462643180224}{\text{H100.} + x1} \cdot \frac{\text{ABT}^{1.5}}{\text{hb-x4-ABT x2x4}} x5^{2.} -$$

$$\begin{aligned}
& \frac{0.032822753226970106 \cdot C_m x^5}{H3.6363748627922092 + 0.43429448190325176 \text{ Log} x} - \\
& \frac{0.017191993447758305 \cdot C_m}{1 - C_p + \frac{-1. + C_p}{x}} \cdot \frac{0.121563}{x} \\
& \frac{J_{x1}^{x2} \cdot 1.06806}{x1} \cdot \frac{J_{Cb x2 x4}^{x1^2} \cdot 0.36486}{x4} \cdot \frac{J_{x1}^{x4} \cdot 0.46106}{x1} \cdot x5^2 \cdot " \\
& H1. - Cpl^{0.60247} H3.6363748627922092 + 0.43429448190325176 \text{ Log} x x5DL^2 L - \\
& \frac{0.00018911192792534135 \cdot C_m Cstern}{1 - C_p + \frac{-1. + C_p}{x}} \cdot \frac{0.121563}{x} \\
& \frac{J_{x1}^{x2} \cdot 1.06806}{x1} \cdot \frac{J_{Cb x2 x4}^{x1^2} \cdot 0.36486}{x4} \cdot \frac{J_{x1}^{x4} \cdot 0.46106}{x1} \cdot x5^2 \cdot " H1. - Cpl^{0.60247} \\
& H3.6363748627922092 + 0.43429448190325176 \text{ Log} x x5DL^2 L + \\
& \frac{x2}{H90. - hal^{1.37565}} \cdot \frac{2.2366662295036503 \cdot *^10 c7^{3.78613} Cb}{x} \\
& \frac{\tilde{a}^3}{x} - 1.41434649220055 \cdot \frac{ABT^{1.5}}{hb - x4 - \frac{ABT}{x2 x4}} + \\
& \frac{J_{x1}^{x2} \cdot 5.081833302662383}{x1} \cdot \frac{J_{x1}^{x2} \cdot 4.79323}{x1} \cdot x2 - c16 - \frac{0.0140407 \cdot x1}{x4} - \\
& \frac{1.75254 \cdot Cb x2 x4}{H Cb x1 x2 x4 L^{0.6666666666666667}} \cdot \frac{0.121563}{x} + 0. \tilde{a} \cdot \frac{12.052161110855605}{x1} \cdot \text{Cos} B \\
& \frac{-13.34248601399447 + 53.59231882287779 \cdot C_p}{x1} \cdot \frac{J_{x2}^{x4} \cdot 1.07961}{x2} - \\
& 0.12411661903448232 \cdot C_m x5^2 - 0.123124389491148 \cdot C_b \cdot C_m x5^2 + \\
& 0.07963435089800353 \cdot C_m^{3 \cdot 2} x5^2 - 0.10284016803599616 \cdot C_m C_w x5^2 + \\
& \frac{0.36326815327165557 \cdot C_m x5^2}{H100. + x1L^{0.16}} + \frac{0.36036406680336 \cdot C_b \cdot C_m x5^2}{H100. + x1L^{0.16}} - \\
& \frac{0.2330761489697664 \cdot C_m^{3 \cdot 2} x5^2}{H100. + x1L^{0.16}} + \frac{0.30099561376389117 \cdot C_m C_w x5^2}{H100. + x1L^{0.16}} + \\
& \frac{4.222992281782996 \cdot C_m x5^2}{H3.6363748627922092 + 0.43429448190325176 \text{ Log} x} + \\
& \frac{4.189232276589061 \cdot C_b \cdot C_m x5^2}{H3.6363748627922092 + 0.43429448190325176 \text{ Log} x} -
\end{aligned}$$

$$\begin{aligned}
& \frac{2.7095102317735344 \cdot \text{Cm}^{3 \cdot 2} \cdot x^{5 \cdot 2}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} + \\
& \frac{3.4990740100052347 \cdot \text{Cm} \cdot \text{Cw} \cdot x^{5 \cdot 2}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} + \\
& \frac{2.211930703567279 \cdot \text{Cm}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} \cdot \left(1. - \text{Cp} + \frac{x^{0.121563}}{x^{0.121563}} \right) \\
& \frac{x^{1.06806}}{x^1} \cdot \frac{x^{0.36486}}{x^2} \cdot \frac{x^{0.46106}}{x^4} \cdot x^{5 \cdot 2} \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2 \cdot \text{L} + \\
& \frac{2.194247793663989 \cdot \text{Cb} \cdot \text{Cm}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} \cdot \left(1. - \text{Cp} + \frac{x^{0.121563}}{x^{0.121563}} \right) \\
& \frac{x^{1.06806}}{x^1} \cdot \frac{x^{0.36486}}{x^2} \cdot \frac{x^{0.46106}}{x^4} \cdot x^{5 \cdot 2} \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2 \cdot \text{L} - \\
& \frac{1.4191948441731832 \cdot \text{Cm}^{3 \cdot 2}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} \cdot \left(1. - \text{Cp} + \frac{x^{0.121563}}{x^{0.121563}} \right) \\
& \frac{x^{1.06806}}{x^1} \cdot \frac{x^{0.36486}}{x^2} \cdot \frac{x^{0.46106}}{x^4} \cdot x^{5 \cdot 2} \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2 \cdot \text{L} + \\
& \frac{0.024331237739240067 \cdot \text{Cm} \cdot \text{Cstern}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} \cdot \left(1. - \text{Cp} + \frac{x^{0.121563}}{x^{0.121563}} \right) \\
& \frac{x^{1.06806}}{x^1} \cdot \frac{x^{0.36486}}{x^2} \cdot \frac{x^{0.46106}}{x^4} \cdot x^{5 \cdot 2} \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2 \cdot \text{L} + \\
& \frac{0.024136725730303878 \cdot \text{Cb} \cdot \text{Cm} \cdot \text{Cstern}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} \cdot \left(1. - \text{Cp} + \frac{x^{0.121563}}{x^{0.121563}} \right) \\
& \frac{x^{1.06806}}{x^1} \cdot \frac{x^{0.36486}}{x^2} \cdot \frac{x^{0.46106}}{x^4} \cdot x^{5 \cdot 2} \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2 \cdot \text{L} - \\
& \frac{0.015611143285905016 \cdot \text{Cm}^{3 \cdot 2} \cdot \text{Cstern}}{\text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2} \cdot \left(1. - \text{Cp} + \frac{x^{0.121563}}{x^{0.121563}} \right) \\
& \frac{x^{1.06806}}{x^1} \cdot \frac{x^{0.36486}}{x^2} \cdot \frac{x^{0.46106}}{x^4} \cdot x^{5 \cdot 2} \\
& \text{H3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \text{D}^2 \cdot \text{L} +
\end{aligned}$$

$$\begin{aligned}
& 1.8327547673179891 \cdot \text{Cm} \text{ Cw} \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \quad 1.06806 \\ \frac{x1^2}{\text{Cb } x2 \text{ } x4} \quad 0.36486 \\ \frac{x^4}{x1} \quad 0.46106 \\ x5^2 \end{array} \right\} \\
& \text{H}1. - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2 \cdot L + \\
& 0.02016030244049788 \cdot \text{Cm} \text{ Cstern Cw} \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \quad 1.06806 \\ \frac{x1^2}{\text{Cb } x2 \text{ } x4} \quad 0.36486 \\ \frac{x^4}{x1} \quad 0.46106 \\ x5^2 \end{array} \right\} \\
& \text{H}1. - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2 \cdot L + \\
& x4 \left\{ \begin{array}{l} -0.2520919703479776 \cdot \text{Cm} \text{ } x5^2 - 0.246248778982296 \text{Cb} \cdot \text{Cm} \text{ } x5^2 + \\ 0.15926870179600705 \text{Cm}^{3 \cdot 2} \text{ } x5^2 - 0.20568033607199232 \cdot \text{Cm} \text{ Cw} \text{ } x5^2 + \\ \frac{0.737830157116032 \cdot \text{Cm} \text{ } x5^2}{\text{H}100. + x1L^{0.16}} + \frac{0.72072813360672 \cdot \text{Cb} \cdot \text{Cm} \text{ } x5^2}{\text{H}100. + x1L^{0.16}} - \\ \frac{0.4661522979395328 \cdot \text{Cm}^{3 \cdot 2} \text{ } x5^2}{\text{H}100. + x1L^{0.16}} + \frac{0.6019912275277823 \cdot \text{Cm} \text{ Cw} \text{ } x5^2}{\text{H}100. + x1L^{0.16}} + \\ \frac{8.577275576473872 \cdot \text{Cm} \text{ } x5^2}{\text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2} + \\ \frac{8.378464553178121 \cdot \text{Cb} \cdot \text{Cm} \text{ } x5^2}{\text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2} - \\ \frac{5.419020463547069 \cdot \text{Cm}^{3 \cdot 2} \text{ } x5^2}{\text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2} + \\ \frac{6.998148020010469 \cdot \text{Cm} \text{ Cw} \text{ } x5^2}{\text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2} + \\ 4.492629380925591 \cdot \text{Cm} \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \quad 1.06806 \\ \frac{x1^2}{\text{Cb } x2 \text{ } x4} \quad 0.36486 \\ \frac{x^4}{x1} \quad 0.46106 \\ x5^2 \end{array} \right\} \\
& \text{H}1. - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 \text{ } x50L^2 \cdot L + \\
& 4.388495587327978 \text{Cb} \cdot \text{Cm} \left\{ \begin{array}{l} 1. - \text{Cp} + \\ -1. +4. \text{Cp} \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \quad 1.06806 \\ \frac{x1^2}{\text{Cb } x2 \text{ } x4} \quad 0.36486 \\ \frac{x^4}{x1} \quad 0.46106 \\ x5^2 \end{array} \right\}
\end{aligned}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} -$$

$$2.8383896883463664^{\cdot} \text{Cm}^{3^{\cdot}2} \left\{ \begin{array}{l} 1.^{\cdot} - \text{Cp} + \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \quad 1.06806^{\cdot} \\ \text{J} \frac{x1^2}{\text{Cb} \text{x}2 \text{x}4} \quad 0.36486^{\cdot} \\ \text{J} \frac{x4}{x1} \quad 0.46106^{\cdot} \\ \text{x}5^{2.^{\cdot}} \end{array} \right\}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} +$$

$$0.0494189231901815^{\cdot} \cdot \text{Cm} \text{Cstern} \left\{ \begin{array}{l} 1.^{\cdot} - \text{Cp} + \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \quad 1.06806^{\cdot} \\ \text{J} \frac{x1^2}{\text{Cb} \text{x}2 \text{x}4} \quad 0.36486^{\cdot} \\ \text{J} \frac{x4}{x1} \quad 0.46106^{\cdot} \\ \text{x}5^{2.^{\cdot}} \end{array} \right\}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} +$$

$$0.048273451460607755^{\cdot} \text{Cb} \cdot \text{Cm} \text{Cstern} \left\{ \begin{array}{l} 1.^{\cdot} - \text{Cp} + \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \quad 1.06806^{\cdot} \\ \text{J} \frac{x1^2}{\text{Cb} \text{x}2 \text{x}4} \quad 0.36486^{\cdot} \\ \text{J} \frac{x4}{x1} \quad 0.46106^{\cdot} \\ \text{x}5^{2.^{\cdot}} \end{array} \right\}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} -$$

$$0.031222286571810032^{\cdot} \text{Cm}^{3^{\cdot}2} \text{Cstern} \left\{ \begin{array}{l} 1.^{\cdot} - \text{Cp} + \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \quad 1.06806^{\cdot} \\ \text{J} \frac{x1^2}{\text{Cb} \text{x}2 \text{x}4} \quad 0.36486^{\cdot} \\ \text{J} \frac{x4}{x1} \quad 0.46106^{\cdot} \\ \text{x}5^{2.^{\cdot}} \end{array} \right\}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} +$$

$$3.6655095346359783^{\cdot} \cdot \text{Cm} \text{Cw} \left\{ \begin{array}{l} 1.^{\cdot} - \text{Cp} + \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \quad 1.06806^{\cdot} \\ \text{J} \frac{x1^2}{\text{Cb} \text{x}2 \text{x}4} \quad 0.36486^{\cdot} \\ \text{J} \frac{x4}{x1} \quad 0.46106^{\cdot} \\ \text{x}5^{2.^{\cdot}} \end{array} \right\}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} +$$

$$0.04032060488099576^{\cdot} \cdot \text{Cm} \text{Cstern} \text{Cw} \left\{ \begin{array}{l} 1.^{\cdot} - \text{Cp} + \end{array} \right\}$$

$$\left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \quad 1.06806^{\cdot} \\ \text{J} \frac{x1^2}{\text{Cb} \text{x}2 \text{x}4} \quad 0.36486^{\cdot} \\ \text{J} \frac{x4}{x1} \quad 0.46106^{\cdot} \\ \text{x}5^{2.^{\cdot}} \end{array} \right\}$$

$$\text{III}1.^{\cdot} - \text{Cpl}^{0.60247} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}} \text{L} +$$

$$\left\{ \begin{array}{l} \text{Y} \\ \text{Z} \\ \text{Z} \end{array} \right\}$$

$$22.531915973518558^{\cdot} \text{ABT} \text{x}5^{2.^{\cdot}} +$$

$$\text{Cb} \text{H}3.6363748627922092^{\cdot} + 0.43429448190325176^{\cdot} \text{Log}x1 \text{x}5\text{Dl}^{2.^{\cdot}}$$

$$11.80182994106281^{\wedge}$$

ABT

$$1. - Cp + \dots 0.121563^{\wedge}$$

$$J \frac{x^2}{x^1} 1.06806^{\wedge}$$

$$Cb x^2 x^4 \dots 0.36486^{\wedge}$$

$$J \frac{x^4}{x^1} 0.46106^{\wedge}$$

$$x^5 \dots$$

$$HCb H1. - Cpl^{0.60247} H3.6363748627922092^{\wedge} + 0.43429448190325176^{\wedge} \text{Log}@x1 x5DL^{2.} L +$$

$$0.1298201293516909^{\wedge} \text{ABT Cstern}$$

$$1. - Cp + \dots 0.121563^{\wedge}$$

$$J \frac{x^2}{x^1} 1.06806^{\wedge}$$

$$Cb x^2 x^4 \dots 0.36486^{\wedge}$$

$$J \frac{x^4}{x^1} 0.46106^{\wedge} \quad x^5 \dots$$

$$HCb H1. - Cpl^{0.60247} H3.6363748627922092^{\wedge} + 0.43429448190325176^{\wedge} \text{Log}@x1 x5DL^{2.} L$$

Appendix G

Mathematical Form of the Shaft Horsepower

SHP =

$$0.00044820375335120644 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} x_5$$

$$-0.014154825683162254 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \text{Cb}^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 -$$

$$+ 0.35387064207905633 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \text{c4 Cb}^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 +$$

$$x_1^{3 \cdot 2} \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 - 0.000020619655732572913 \cdot \text{Cb}^4 \cdot \frac{\text{ABT}^5}{\text{Cm}^4}$$

$$\bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 + 0.0005154913933143228 \cdot \text{c4 Cb}^4 \cdot$$

$$\frac{\text{ABT}^5}{\text{Cm}^4} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 + 0.00044820375335120644 \cdot x_4$$

$$x_5^3 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \text{Cb}^4 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 -$$

$$0.13470874022001053 \cdot \text{c4 Cb}^4 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 +$$

$$0.005263454088066636 \cdot \text{Cb}^5 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 -$$

$$0.1315863522016659 \cdot \text{c4 Cb}^5 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 -$$

$$0.0034042950508580147 \cdot \text{Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 +$$

$$0.08510737627145036 \cdot \text{c4 Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 +$$

$$0.004396322329829218 \cdot \text{Cb}^4 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \text{Cw} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 -$$

$$0.10990805824573044 \cdot \text{c4 Cb}^4 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \text{Cw} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb}^{-x_4} \cdot \text{ABT}^2 x_4} x_5^2 +$$

$$0.00044820375335120644 \cdot x_2 x_5 \cdot \frac{\text{ABT}^5}{\text{Cm}^4} \text{Cb}^4 \cdot \frac{\text{ABT}^5}{\text{Cm}^4}$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.06632338732337661 \cdot c4 Cb^4 \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] + \\
& 0.002631727044033318 \cdot Cb^5 \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.06579317610083295 \cdot c4 Cb^5 \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.0017021475254290074 \cdot Cb^4 \cdot Cm^{3 \cdot 2} \bar{a} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] + \\
& 0.04255368813572518 \cdot c4 Cb^4 \cdot Cm^{3 \cdot 2} \bar{a} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] + \\
& 0.002198161164914609 \cdot Cb^4 \cdot Cm Cw \bar{a} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.05495402912286522 \cdot c4 Cb^4 \cdot Cm Cw \bar{a} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] +
\end{aligned}$$

$$x1 \left[\frac{1}{k} \int_{-1}^1 Cm H90 \cdot \text{hal}^{1.37565} \cdot 8.019857592459415 \cdot *^6 AT c7^{3.78613} Cb \right]$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} \right] + \\
& \left[\frac{1}{x1} \int_{-1}^1 5.081833302662383 \right] \cdot c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \\
& \frac{1.75254 \cdot Cb \cdot x2 \cdot x4}{HCb \cdot x1 \cdot x2 \cdot x4} \left[\frac{w}{z} + 0 \cdot \bar{a} \right] + \\
& \text{CosB} \left[\frac{-13.34248601399447 + 53.59231882287779 \cdot Cb}{x1} \right] \cdot \frac{x4}{x2} \cdot 1.07961 \cdot x5 +
\end{aligned}$$

$$x2 \left[\frac{1}{k} \int_{-1}^1 H90 \cdot \text{hal}^{1.37565} \cdot 1.002482199057427 \cdot *^7 c7^{3.78613} Cb \bar{a}^{-1.41434649220055} \right]$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} \right] + \left[\frac{1}{x1} \int_{-1}^1 5.081833302662383 \right] \cdot c16 - \\
& \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \frac{1.75254 \cdot Cb \cdot x2 \cdot x4}{HCb \cdot x1 \cdot x2 \cdot x4} \left[\frac{w}{z} + 0 \cdot \bar{a} \right] + \\
& \text{CosB} \left[\frac{-13.34248601399447 + 53.59231882287779 \cdot Cb}{x1} \right]
\end{aligned}$$

$$x^4 \int \frac{x^{1.07961}}{x^2} dx + 0.00044820375335120644 x^5$$

$$-0.12411661903448232 \cdot C_m^{(5)} x^{5.2} - 0.123124389491148 \cdot C_b \cdot C_m^{(5)} x^{5.2} +$$

$$0.07963435089800353 \cdot C_m^{(3.2)} x^{5.2} - 0.10284016803599616 \cdot C_m^{(5)} C_w x^{5.2} +$$

$$\frac{0.36326815327165557 \cdot C_m^{(5)} x^{5.2}}{H_{100} + x L^{0.16}} + \frac{0.36036406680336 \cdot C_b \cdot C_m^{(5)} x^{5.2}}{H_{100} + x L^{0.16}} -$$

$$\frac{0.2330761489697664 \cdot C_m^{(3.2)} x^{5.2}}{H_{100} + x L^{0.16}} + \frac{0.30099561376389117 \cdot C_m^{(5)} C_w x^{5.2}}{H_{100} + x L^{0.16}} +$$

$$\frac{4.222992281782996 \cdot C_m^{(5)} x^{5.2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16}} +$$

$$\frac{4.189232276589061 \cdot C_b \cdot C_m^{(5)} x^{5.2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16}} -$$

$$\frac{2.7095102317735344 \cdot C_m^{(3.2)} x^{5.2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16}} +$$

$$\frac{3.4990740100052347 \cdot C_m^{(5)} C_w x^{5.2}}{H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16}} +$$

$$2.211930703567279 \cdot C_m^{(5)} \int \frac{x^{0.121563}}{1 - C_p + \frac{x^{0.121563}}{-1 + C_p}} dx$$

$$\int \frac{x^{1.06806}}{x^1} dx \int \frac{x^{1.2}}{C_b x^2 x^4} dx \int \frac{x^{0.36486}}{x^1} dx \int \frac{x^{0.46106}}{x^1} dx x^{5.2} \cdot H_{1.} - C_{pl}^{0.60247}$$

$$H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16} +$$

$$2.194247793663989 \cdot C_b \cdot C_m^{(5)} \int \frac{x^{0.121563}}{1 - C_p + \frac{x^{0.121563}}{-1 + C_p}} dx$$

$$\int \frac{x^{1.06806}}{x^1} dx \int \frac{x^{1.2}}{C_b x^2 x^4} dx \int \frac{x^{0.36486}}{x^1} dx \int \frac{x^{0.46106}}{x^1} dx x^{5.2} \cdot H_{1.} - C_{pl}^{0.60247}$$

$$H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16} -$$

$$1.4191948441731832 \cdot C_m^{(3.2)} \int \frac{x^{0.121563}}{1 - C_p + \frac{x^{0.121563}}{-1 + C_p}} dx$$

$$\int \frac{x^{1.06806}}{x^1} dx \int \frac{x^{1.2}}{C_b x^2 x^4} dx \int \frac{x^{0.36486}}{x^1} dx \int \frac{x^{0.46106}}{x^1} dx x^{5.2} \cdot H_{1.} - C_{pl}^{0.60247}$$

$$H_{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log} @ x L^{0.16} +$$

$$0.024331237739240067 \cdot C_m^{(5)} C_{stern} \int \frac{x^{0.121563}}{1 - C_p + \frac{x^{0.121563}}{-1 + C_p}} dx$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \text{ Log} \otimes x^1 x^{5\text{DL}^2} \cdot \text{l} +$$

$$\left. \frac{0.024136725730303878 \cdot \text{C}_b \cdot \text{C}_m \text{ Cstern}}{k} \right\} \cdot \left. \frac{1. - \text{Cp} +}{-1. +4. \text{Cp}} \right\}^{0.121563}$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \text{ Log} \otimes x^1 x^{5\text{DL}^2} \cdot \text{l} -$$

$$\left. \frac{0.015611143285905016 \cdot \text{C}_m^{3 \cdot 2} \text{ Cstern}}{k} \right\} \cdot \left. \frac{1. - \text{Cp} +}{-1. +4. \text{Cp}} \right\}^{0.121563}$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \text{ Log} \otimes x^1 x^{5\text{DL}^2} \cdot \text{l} +$$

$$\left. \frac{1.8327547673179891 \cdot \text{C}_m \text{ Cw}}{k} \right\} \cdot \left. \frac{1. - \text{Cp} +}{-1. +4. \text{Cp}} \right\}^{0.121563}$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \text{ Log} \otimes x^1 x^{5\text{DL}^2} \cdot \text{l} +$$

$$\left. \frac{0.02016030244049788 \cdot \text{C}_m \text{ Cstern Cw}}{k} \right\} \cdot \left. \frac{1. - \text{Cp} +}{-1. +4. \text{Cp}} \right\}^{0.121563}$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \text{ Log} \otimes x^1 x^{5\text{DL}^2} \cdot \text{l} +$$

$$\left. \frac{0.00044820375335120644 \cdot x^2 x^5}{x^4 k} \right\} \cdot \left. \frac{0.0009646830697532433 \cdot \text{C}_m x^{5^2}}{k} \right\} -$$

$$\frac{0.002823462643180224 \cdot \text{C}_m x^{5^2}}{\text{H}100. + x^{1 \cdot 10}}$$

$$\frac{0.032822753226970106 \cdot \text{C}_m x^{5^2}}{\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \text{ Log} \otimes x^1 x^{5\text{DL}^2} \cdot \text{l} -}$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\left. \frac{0.017191993447758305 \cdot \text{C}_m}{k} \right\} \cdot \left. \frac{1. - \text{Cp} +}{-1. +4. \text{Cp}} \right\}^{0.121563}$$

$$\left(\frac{J_{x^2}}{x^1} \right)^{1.06806} \left(\frac{J_{x^1}}{C_b x^2 x^4} \right)^{2 \cdot 0.36486} \left(\frac{J_{x^4}}{x^1} \right)^{0.46106} x^{5^2} \cdot \left\{ \text{HH}1. - \text{Cpl}^{0.60247} \right.$$

$$\begin{aligned}
& \text{HH1.}^{\cdot} - \text{Cpl}^{0.60247} \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} - \\
& \left\{ \begin{array}{l} 0.00018911192792534135^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cstern}^{\cdot} \\ 1. - \text{Cp} + \frac{-1. + 4. \text{Cp}}{\cdot} \end{array} \right\}^{0.121563^{\cdot}} \\
& \left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \\ \text{J} \frac{x1^2}{\text{Cb } x2 \text{ } x4} \\ \text{J} \frac{x4}{x1} \end{array} \right\}^{1.06806^{\cdot} \quad 0.36486^{\cdot} \quad 0.46106^{\cdot}} x5^{2^{\cdot}} \text{H1.}^{\cdot} - \text{Cpl}^{0.60247} \\
& \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} + \\
& 0.00044820375335120644^{\cdot} x4 \text{ } x5^3 - 0.2520919703479776^{\cdot} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}} - \\
& 0.246248778982296^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}} + 0.15926870179600705^{\cdot} \text{Cm}^{3+2} x5^{2^{\cdot}} - \\
& 0.20568033607199232^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw } x5^{2^{\cdot}} + \\
& \frac{0.737830157116032^{\cdot} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} + \frac{0.72072813360672^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} - \\
& \frac{0.4661522979395328^{\cdot} \text{Cm}^{3+2} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} + \\
& \frac{0.6019912275277823^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw } x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} + \\
& \frac{8.577275576473872^{\cdot} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}}} + \\
& \frac{8.378464553178121^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}}} - \\
& \frac{5.419020463547069^{\cdot} \text{Cm}^{3+2} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}}} + \\
& \frac{6.998148020010469^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw } x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}}} + \\
& \left\{ \begin{array}{l} 4.492629380925591^{\cdot} \cdot \text{Cm}^{\cdot} \\ 1. - \text{Cp} + \frac{-1. + 4. \text{Cp}}{\cdot} \end{array} \right\}^{0.121563^{\cdot}} \\
& \left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \\ \text{J} \frac{x1^2}{\text{Cb } x2 \text{ } x4} \\ \text{J} \frac{x4}{x1} \end{array} \right\}^{1.06806^{\cdot} \quad 0.36486^{\cdot} \quad 0.46106^{\cdot}} x5^{2^{\cdot}} \text{H1.}^{\cdot} - \text{Cpl}^{0.60247} \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} + \\
& \left\{ \begin{array}{l} 4.388495587327978^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} \\ 1. - \text{Cp} + \frac{-1. + 4. \text{Cp}}{\cdot} \end{array} \right\}^{0.121563^{\cdot}} \\
& \left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \\ \text{J} \frac{x1^2}{\text{Cb } x2 \text{ } x4} \\ \text{J} \frac{x4}{x1} \end{array} \right\}^{1.06806^{\cdot} \quad 0.36486^{\cdot} \quad 0.46106^{\cdot}} x5^{2^{\cdot}} \text{H1.}^{\cdot} - \text{Cpl}^{0.60247} \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} -
\end{aligned}$$

$$2.8383896883463664 \cdot \text{Cm}^{3 \cdot 2} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.0494189231901815 \cdot \text{Cm} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.048273451460607755 \cdot \text{Cb} \cdot \text{Cm} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l -$$

$$0.031222286571810032 \cdot \text{Cm}^{3 \cdot 2} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$3.6655095346359783 \cdot \text{Cm} \cdot \text{Cw} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.04032060488099576 \cdot \text{Cm} \cdot \text{Cstern} \cdot \text{Cw} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.00044820375335120644 \cdot x5 \cdot 135.730345312 \cdot \text{AT} \cdot c6 \cdot x5^{2 \cdot} -$$

$$\frac{0.662228354777248 \text{ ABT } x^{5^2}}{Cb} +$$

$$\frac{1.9382293310553598 \text{ ABT } x^{5^2}}{Cb H100. + x1^{0.16}} +$$

$$K \left[569.2916975592 \text{ ABT}^{1.5} \bar{a} \left\{ \frac{-0.566236320613344}{k-1.5} \frac{1}{hb+x^2} \right\} \right]$$

$$lx5' |' | - 2.45175 \cdot \text{ABT} - 9.807 \text{ hb} + 9.807 x4 + 0.03969110399999999 x^{5^2} \text{ MM}^{\wedge}$$

$$3. \left\{ \begin{array}{l} \text{V} \\ \text{V} \\ \text{V} \end{array} \right. | 3.779184373405185 +$$

$$1. \text{ lx5' |' | - 2.45175} \cdot \text{ABT} - 9.807 \text{ hb} + 9.807 x4 + 0.03969110399999999 x^{5^2} \text{ MM}^{\wedge}$$

$$2. \text{ M} +$$

$$\frac{22.531915973518558 \text{ ABT } x^{5^2}}{Cb H3.6363748627922092 + 0.43429448190325176 \text{ Log}@x1 x5DL^{-}}$$

$$K \left[11.80182994106281 \text{ ABT} \left\{ \frac{1. - Cp + \frac{0.121563}{-1. + 4. Cp}}{k} \right\} \right]$$

$$\left\{ \frac{J \frac{x^2}{x1} 1.06806}{k} \right\} \left\{ \frac{J \frac{x1^{2.}}{Cb x2 x4} 0.36486}{k} \right\} \left\{ \frac{J \frac{x^4}{x1} 0.46106}{x5^2} \right\} \left\{ \frac{\text{V}}{\text{V}} \right\}$$

$$HCb H1. - Cpl^{0.60247} H3.6363748627922092 + 0.43429448190325176 \text{ Log}@x1 x5DL^{2.} L +$$

$$K \left[0.1298201293516909 \text{ ABT } Cstern \left\{ \frac{1. - Cp + \frac{0.121563}{-1. + 4. Cp}}{k} \right\} \right]$$

$$\left\{ \frac{J \frac{x^2}{x1} 1.06806}{k} \right\} \left\{ \frac{J \frac{x1^{2.}}{Cb x2 x4} 0.36486}{k} \right\} \left\{ \frac{J \frac{x^4}{x1} 0.46106}{x5^2} \right\} \left\{ \frac{\text{V}}{\text{V}} \right\}$$

$$HCb H1. - Cpl^{0.60247} H3.6363748627922092 + 0.43429448190325176 \text{ Log}@x1 x5DL^{2.} L \left\{ \frac{\text{V}}{\text{V}} \right\}$$

Appendix H

Mathematical Form of the Lightship Weight

WL =

$$\begin{aligned}
 & 1.03 \cdot 10.6197720682895518 \cdot Hx1 \cdot x2 \cdot x3L^{0.724} + 0.05705477170296265 \cdot \\
 & H1. + 0.49532 \cdot CbL \cdot H1. + 0.000928 \cdot H - 8.3 \cdot x1 \cdot x3L^{1.691} \cdot L \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + \\
 & 0.0011232166043994344 \cdot lx5 \cdot l1 \cdot H90. - haL^{1.37565} \cdot l2.2366662295036503 \cdot c^{10} \cdot c7^{3.78613} \cdot \\
 & Cb \cdot \bar{a}^{1-1.41434649220055} \cdot l - ABT^{1.5} \cdot lhb - x4 - ABT \cdot x2 \cdot x4^{MM} + \\
 & H5.081833302662383 \cdot H - c16 - H4.79323 \cdot x2L \cdot x1 + H0.0140407 \cdot x1L \cdot x4 - \\
 & H1.75254 \cdot Cb \cdot x2 \cdot x4L \cdot HCb \cdot x1 \cdot x2 \cdot x4L^{0.6666666666666667} \cdot ll' \\
 & lx5 \cdot l' \cdot x1^{MM^{0.9}} + 0. \bar{a}^{1-12.953161110595605} \cdot lx5 \cdot l' \cdot x1^{MM^{3.29}} \cdot M \\
 & CosAH - 13.34248601399447 + 53.59231882287779 \cdot Cpl' \\
 & lx5 \cdot l' \cdot x1^{MM^2} \cdot EM \cdot x1 \cdot x2 \cdot H1. - H0.8 \cdot ATL \cdot Hcm \cdot x2 \cdot x4LL \\
 & x4 \cdot Hx4 \cdot x2L^{1.07961} \cdot M + 135.730345312 \cdot AT \cdot c6 \cdot x5^{2.} + \\
 & 135.730345312 \cdot l - 0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1. \cdot c4L \cdot Cb^{4.} \\
 & \bar{a}^{1-1.41434649220055} \cdot l - ABT^{1.5} \cdot lhb - x4 - ABT \cdot x2 \cdot x4^{MM} \cdot x1 + \\
 & 0.006 \cdot H100. + x1L^{0.16} \cdot MH2.38 \cdot ABTL \cdot Cb + Cm \cdot x1 \cdot H0.453 + \\
 & 0.4425 \cdot Cb - 0.2862 \cdot Cm + 0.3696 \cdot Cw - H0.003467 \cdot x2L \cdot x4L \cdot Hx2 + 2. \cdot x4LM \\
 & x5^{2.} + 1569.2916975592 \cdot ABT^{1.5} \cdot \bar{a}^{1-9.566326530612244} \cdot ' \\
 & ll' \cdot ABTM' \cdot H - 1.5 \cdot hb + x4LM^{2.} \cdot M \cdot lx5 \cdot l' \cdot l - 2.45175 \cdot ABT - \\
 & 9.807 \cdot hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot M^{3.} \cdot M' \\
 & 13.779184373405185 + 1. \cdot lx5 \cdot l' \cdot l - 2.45175 \cdot ABT - 9.807 \cdot hb + 9.807 \cdot x4 + \\
 & 0.03969110399999999 \cdot x5^{2.} \cdot M^{2.} \cdot M + 110.179775898399999 \cdot \\
 & H0.93 + 1 \cdot H1. - Cpl^{0.60247} \cdot H0.487118 \cdot H1. + 0.011 \cdot CsternL \\
 & H1 \cdot H1. - Cp + H0.000384 \cdot Cp \cdot x1L \cdot H - 1. + 4. \cdot CplLL^{0.121563} \cdot \\
 & Hx2 \cdot x1L^{1.06806} \cdot Hx1^{2.} \cdot HCb \cdot x2 \cdot x4LL^{0.36486} \cdot Hx4 \cdot x1L^{0.46106} \cdot LL \\
 & H2.38 \cdot ABTL \cdot Cb + Cm \cdot x1 \cdot H0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
 & 0.3696 \cdot Cw - H0.003467 \cdot x2L \cdot x4L \cdot Hx2 + 2. \cdot x4LM \cdot x5^{2.} \cdot M' \\
 & H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \cdot x1 \cdot x5DL^{2.} \cdot M^{0.775} \cdot M
 \end{aligned}$$

Appendix I

Mathematical Form of the Center of Gravity of Lightship Weight

WL =

$$0.3 - 0.0004270229550515012 \cdot x_1 x_3 \cdot H x_1 x_2 x_3 L^{0.724} L''$$

$$\left\{ \begin{array}{l} 0.6197720682895518 \cdot H x_1 x_2 x_3 L^{0.724} + 0.05705477170296265 \cdot H L'' + 0.49532 \cdot C b L \end{array} \right.$$

$$\left\{ \begin{array}{l} 1. + 0.000928 \cdot J - 8.3 + \frac{x_1}{x_3} \cdot H x_1 x_2 x_3 L^{1.691} \\ \left\{ \frac{1}{x_3} \cdot H x_1 x_2 x_3 L^{1.003} + 0.0011232166043994344 \right\} \end{array} \right.$$

$$\left\{ \begin{array}{l} x_5 \cdot H 90. - \text{hal}^{1.57563} \\ 2.2366662295036503 \cdot 10^7 \cdot c^{7.78613} \cdot C b \cdot \bar{a} \end{array} \right. - 1.41434649220055$$

$$\& \left\{ \begin{array}{l} \frac{A B T^{1.5}}{h b - x_4 - A B T} \cdot \frac{1}{x_2 x_4} + \frac{1}{x_1} \cdot J \end{array} \right. 5.081833302662383$$

$$\left\{ \begin{array}{l} -c16 - \frac{4.79323 \cdot x_2}{x_1} + \frac{0.0140407 \cdot x_1}{x_4} - \end{array} \right.$$

$$\frac{1.75254 \cdot C b \cdot x_2 \cdot x_4}{H C b \cdot x_1 \cdot x_2 \cdot x_4 L^{0.6666666666666667}} \cdot \frac{W}{k} + 0. \bar{a} \left\{ \begin{array}{l} - \frac{0.05211149895666}{k \cdot x_1} \end{array} \right.$$

$$\text{CosB} \left\{ \begin{array}{l} -13.34248601399447 + 53.59231882287779 \cdot C p \\ \frac{1}{x_1} \end{array} \right. x_1$$

$$x_2 J_1 - \frac{0.8 \cdot A T}{C m \cdot x_2 \cdot x_4} \cdot \frac{x_4}{x_2} \cdot H x_1 x_2 x_3 L^{1.07961} + 135.730345312 \cdot A T \cdot c_6 \cdot x_5^2 +$$

$$135.730345312 \cdot -0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1. \cdot c_4 L$$

$$C b^4 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{A B T^{1.5}}{h b - x_4 - A B T} \cdot \frac{1}{x_1} + \frac{0.006}{H 100. + x_1 L^{0.16}}$$

$$J \frac{2.38 \cdot A B T}{C b} + \frac{1}{C m} \cdot x_1 J_0.453 + 0.4425 \cdot C b - 0.2862 \cdot C m +$$

$$0.3696 \cdot C w - \frac{0.003467 \cdot x_2}{x_4} \cdot H x_2 + 2. \cdot x_4 L x_5^2 +$$

$$569.2916975592 \cdot \text{ABT}^{1.5} \cdot \bar{a} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x^5} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\} -$$

$$9.807 \cdot \text{hb} + 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^{5^2} \cdot \text{MM}^{\wedge 3} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\}$$

$$13.779184373405185 \cdot 1 \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x^5} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\} - 9.807 \cdot \text{hb} +$$

$$9.807 \cdot x^4 + 0.03969110399999999 \cdot x^{5^2} \cdot \text{MM}^{\wedge 2} \cdot \text{M} +$$

$$10.179775898399999 \cdot \left\{ \frac{1}{k} \int_0^k 0.93 dx \right\} + \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{H}1 \cdot - \text{Cpl}^{0.60247}} dx \right\} \cdot 0.487118 \cdot \text{H}1 \cdot + 0.011 \cdot \text{Csternl}$$

$$\left\{ \frac{1}{k} \int_0^k \frac{1}{1 \cdot - \text{Cp} + \frac{0.121563}{-1.4 \cdot \text{Cp}}} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{J} \frac{x^2}{x1} \cdot 1.06806} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{Cb} \cdot x^2 \cdot x^4} dx \right\} \cdot 0.36486$$

$$\left\{ \frac{1}{k} \int_0^k \frac{1}{\text{J} \frac{x^4}{x1} \cdot 0.46106} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{J} \frac{2.38 \cdot \text{ABT}}{\text{Cb}}} dx \right\} + \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{Cm} \cdot x1 \cdot \text{J} 0.453} dx \right\} + 0.4425 \cdot \text{Cb} -$$

$$0.2862 \cdot \text{Cm} + 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x^2}{x^4} \cdot \text{Hx}^2 + 2 \cdot x^4 \cdot \text{LN} \cdot x^{5^2} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\}$$

$$\text{H}3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} \otimes x1 \cdot x^{5 \cdot \text{L}^2} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\}^{\wedge 0.775} +$$

$$x^3 \cdot \left\{ \frac{1}{k} \int_0^k \text{H}0.6228709286309995 \cdot \text{Hx}1 \cdot x^2 \cdot x^3 \cdot \text{L}^{0.724} dx \right\} + \left\{ \frac{1}{k} \int_0^k 0.6197720682895518 \cdot \text{Hx}1 \cdot x^2 \cdot x^3 \cdot \text{L}^{0.724} dx \right\} +$$

$$0.05705477170296265 \cdot \text{H}1 \cdot + 0.49532 \cdot \text{Cbl}$$

$$\left\{ \frac{1}{k} \int_0^k 1 \cdot + 0.000928 \cdot \text{J} - 8.3 \cdot + \frac{x^1}{x^3} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{x} dx \right\}^{1.691} dx \right\}$$

$$\text{Hx}1 \cdot x^2 \cdot x^3 \cdot \text{L}^{1.003} + 0.0011232166043994344 \cdot$$

$$\left\{ \frac{1}{k} \int_0^k \frac{1}{x^5} dx \right\} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{H}90 \cdot - \text{hal}^{1.5/565}} dx \right\} \cdot 2.236662295036503 \cdot \text{c}^{\wedge 10} \cdot \text{c}^{7^{3.78613}} \cdot \text{Cb}$$

$$\bar{a}^{\wedge 3} - 1.41434649220055 \cdot \& \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{hb} - x^4 - \frac{\text{ABT}^{1.5}}{\text{ABT} \cdot x^2 \cdot x^4}} dx \right\} + \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{I} \frac{1}{\text{XT}}} dx \right\}$$

$$\left\{ \frac{1}{k} \int_0^k 5.081833302662383 \cdot -c16 - \frac{4.79323 \cdot x^2}{x1} + \frac{0.0140407 \cdot x1}{x4} dx \right\} -$$

$$\left\{ \frac{1}{k} \int_0^k \frac{1.75254 \cdot \text{Cb} \cdot x^2 \cdot x^4}{\text{HCb} \cdot x1 \cdot x^2 \cdot x^4 \cdot \text{L}^{0.6666666666666667}} dx \right\} + 0 \cdot \bar{a} \cdot \left\{ \frac{1}{k} \int_0^k \frac{1}{\text{XT}} dx \right\} - \frac{12.052161110505605}{k}$$

$$\text{Cos} \bar{b} - \frac{13.34248601399447 + 53.59231882287779 \cdot \text{Cp}}{\left\{ \frac{1}{k} \int_0^k \frac{1}{\text{XT}} dx \right\}} \cdot x1$$

$$\begin{aligned}
& x2 J1. \cdot - \frac{0.8 \cdot \text{AT}}{\text{Cm} x2 x4} x4 J \frac{x4}{x2} \frac{1.07961}{x2} + 135.730345312 \cdot \text{AT} c6 x5^2 \cdot + \\
& 135.730345312 \cdot - 0.00205 \cdot - 0.0010954451150103322 \cdot \text{H} - 0.04 \cdot + 1. \cdot c4L \\
& \text{Cb}^4 \cdot \bar{a} \cdot - 1.41434649220055 \cdot \frac{\text{AT} L^5}{\text{hb} \cdot x4 - \text{ABT} \cdot x2 x4} \cdot \frac{\text{H}1}{x1} + \frac{0.006 \cdot \text{H}100. \cdot + x1 L^{0.16}}{x1} \\
& J \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \cdot \frac{\text{H}1}{x1} J0.453 \cdot + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + 0.3696 \cdot \text{Cw} - \\
& \frac{0.003467 \cdot x2}{x4} \text{H}x2 + 2. \cdot x4 L N x5^2 \cdot + 569.2916975592 \cdot \text{ABT}^{1.5} \\
& \bar{a} \cdot \frac{-0.566326530612214 \cdot}{k \cdot -1.5 \cdot \text{hb} \cdot x4} \cdot \text{L} x5 \cdot \text{L} \cdot \text{L} - 2.45175 \cdot \cdot \frac{\text{H}1}{x1} \cdot \text{ABT} - 9.807 \cdot \text{hb} + \\
& 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{H}^3 \cdot \\
& 13.779184373405185 \cdot + 1. \cdot \text{L} x5 \cdot \text{L} \cdot \text{L} - 2.45175 \cdot \cdot \frac{\text{H}1}{x1} \cdot \text{ABT} - 9.807 \cdot \\
& \text{hb} + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{H}^2 \cdot \text{H} + \\
& 10.179775898399999 \cdot \cdot 0.93 \cdot + \frac{\text{H}1 \cdot - \text{Cpl}^{0.60247}}{x1} \cdot 0.487118 \cdot \\
& \text{H}1 \cdot + 0.011 \cdot \text{Cstern} \cdot \frac{\text{H}1 \cdot - \text{Cp} + \frac{\text{H}1 \cdot \text{H}1}{x1} \cdot \frac{\text{H}1 \cdot \text{H}1}{x1}}{x1} \cdot 0.121563 \cdot \\
& J \frac{x2}{x1} \frac{1.06806 \cdot}{x1} \cdot \frac{\text{H}1 \cdot x1^2 \cdot}{\text{Cb} x2 x4} \cdot \frac{0.36486 \cdot}{x1} \cdot J \frac{x4}{x1} \cdot \frac{0.46106 \cdot \text{H}1}{x1} \\
& J \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \cdot \frac{\text{H}1}{x1} J0.453 \cdot + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + \\
& 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x2}{x4} \text{H}x2 + 2. \cdot x4 L N x5^2 \cdot \\
& \text{H}3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} @ x1 x5 D L^2 \cdot \cdot \text{H}^0.775 \cdot + \\
& \text{H}x1 x2 x3 L^{1.003} \cdot \text{L} \cdot 0.6197720682895518 \cdot \\
& \text{H}x1 x2 x3 L^{0.724} \cdot + \\
& 0.05705477170296265 \cdot \text{H}1 \cdot + 0.49532 \cdot \text{Cbl} \\
& J \frac{1. \cdot}{x1} + 0.000928 \cdot J - 8.3 \cdot + \frac{x1}{x3} \frac{1.691 \cdot}{x1}
\end{aligned}$$

$$Hx1 x2 x3L^{1.003} + 0.0011232166043994344$$

$$\left[\begin{array}{c} x5 \\ \hline k \end{array} \right] \left[\begin{array}{c} H90 \\ \hline - hal \\ \hline k \end{array} \right] \left[\begin{array}{c} 1.37565 \\ \hline k \end{array} \right] 2.2366662295036503 \cdot 10c7^{3.78613} Cb$$

$$\bar{a}^{\wedge} \left[\begin{array}{c} 1.5 \\ \hline k \end{array} \right] - 1.41434649220055 \cdot \left[\begin{array}{c} ABT \\ \hline hb - x4 - ABT x2 x4 \\ \hline k \end{array} \right] + \left[\begin{array}{c} 1 \\ \hline x1 \\ \hline k \end{array} \right]^{0.9}$$

$$\left[\begin{array}{c} 5.081833302662383 \\ \hline k \end{array} \right] - c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} -$$

$$\frac{1.75254 \cdot Cb x2 x4}{HCb x1 x2 x4L^{0.6666666666666667}} + 0 \cdot \bar{a} \left[\begin{array}{c} 13.8514111855625 \\ \hline k \end{array} \right]^{0.29}$$

$$\text{CosB} \left[\begin{array}{c} -13.34248601399447 + 53.59231882287779 \cdot Cp \\ \hline k \end{array} \right] x1$$

$$x2 J1 \cdot \left[\begin{array}{c} 0.8 \cdot AT \\ \hline Cm x2 x4 \\ \hline k \end{array} \right] x4 J \left[\begin{array}{c} x4 \\ \hline x2 \\ \hline k \end{array} \right]^{1.07961} + 135.730345312 \cdot AT c6 x5^{2.} +$$

$$135.730345312 \left[\begin{array}{c} -0.00205 \\ \hline k \end{array} \right] - 0.0010954451150103322 \cdot H - 0.04 \cdot 1 \cdot c4L$$

$$Cb^4 \cdot \bar{a} \left[\begin{array}{c} -1.41434649220055 \cdot \left[\begin{array}{c} ABT \\ \hline hb - x4 - ABT x2 x4 \\ \hline k \end{array} \right] \cdot \left[\begin{array}{c} 1 \\ \hline x1 \\ \hline k \end{array} \right] \\ \hline k \end{array} \right] + \frac{0.006}{H100 \cdot x1L^{0.16}}$$

$$J \left[\begin{array}{c} 2.38 \cdot ABT \\ \hline Cb \\ \hline k \end{array} \right] + \left[\begin{array}{c} 1 \\ \hline Cm \\ \hline k \end{array} \right] x1 J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + 0.3696 \cdot Cw -$$

$$\frac{0.003467 \cdot x2}{x4} Hx2 + 2 \cdot x4LN x5^{2.} + 569.2916975592 \cdot ABT^{1.5}$$

$$\bar{a} \left[\begin{array}{c} -9.566326570612214 \\ \hline k \end{array} \right]^{1.5} \cdot \left[\begin{array}{c} 1 \\ \hline hb - x4 \\ \hline k \end{array} \right] \cdot \left[\begin{array}{c} 1 \\ \hline x5 \\ \hline k \end{array} \right] \cdot \left[\begin{array}{c} 1 \\ \hline l - 2.45175 \\ \hline k \end{array} \right] \cdot \left[\begin{array}{c} 1 \\ \hline ABT \\ \hline k \end{array} \right] - 9.807 \cdot hb +$$

$$9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot \left[\begin{array}{c} 1 \\ \hline MM^3 \\ \hline k \end{array} \right] \cdot "$$

$$13.779184373405185 + 1 \cdot \left[\begin{array}{c} 1 \\ \hline lx5 \\ \hline k \end{array} \right] \cdot \left[\begin{array}{c} 1 \\ \hline l - 2.45175 \\ \hline k \end{array} \right] \cdot \left[\begin{array}{c} 1 \\ \hline ABT \\ \hline k \end{array} \right] - 9.807 \cdot$$

$$hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot \left[\begin{array}{c} 1 \\ \hline MM^2 \cdot M \\ \hline k \end{array} \right] +$$

$$\left[\begin{array}{c} 10.179775898399999 \\ \hline k \end{array} \right] \cdot 0.93 + \left[\begin{array}{c} 1 \\ \hline H1 \\ \hline k \end{array} \right] - \left[\begin{array}{c} 1 \\ \hline Cpl \\ \hline k \end{array} \right]^{0.60247} \cdot 0.487118$$

$$H1 \cdot + 0.011 \cdot Csternl \left[\begin{array}{c} 1 \\ \hline I \\ \hline k \end{array} \right] - Cp + \left[\begin{array}{c} 1 \\ \hline -1.74 \cdot Cp \\ \hline k \end{array} \right]^{0.121563}$$

$$J \left[\begin{array}{c} x2 \\ \hline x1 \\ \hline k \end{array} \right]^{1.06806} \cdot \left[\begin{array}{c} 1 \\ \hline Cb x2 x4 \\ \hline k \end{array} \right]^{1.2} \cdot \left[\begin{array}{c} 1 \\ \hline J \\ \hline k \end{array} \right]^{0.36486} \cdot \left[\begin{array}{c} 1 \\ \hline x1 \\ \hline k \end{array} \right]^{0.46106} \cdot \left[\begin{array}{c} 1 \\ \hline V \\ \hline k \end{array} \right]$$

$$\begin{aligned}
& J \frac{2.38 \text{ ABT}}{\text{Cb}} + \text{Cm} \times 10.453 + 0.4425 \text{ Cb} - 0.2862 \text{ Cm} + \\
& 0.3696 \text{ Cw} - \frac{0.003467 \times 2}{x^4} \text{ Hx}2 + 2 \cdot x4 \text{ Lx}5^2 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right. \\
& \text{H}3.6363748627922092 + 0.43429448190325176 \text{ Log} \times 1 \text{ x}5 \text{ L}^2 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \wedge 0.775 + \\
& \text{H}0.013673497188513961 \text{ Cb} \text{ Hx}1 \text{ x}2 \text{ x}3 \text{ L}^{1.003} \text{ L} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} 0.6197720682895518 \\
& \text{Hx}1 \text{ x}2 \text{ x}3 \text{ L}^{0.724} + \\
& 0.05705477170296265 \text{ H}1 \cdot + 0.49532 \text{ CbL} \\
& \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} 1 \cdot + 0.000928 \text{ J} - 8.3 + \frac{x^1 \cdot 1.691}{x^3} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \\
& \text{Hx}1 \text{ x}2 \text{ x}3 \text{ L}^{1.003} + 0.0011232166043994344 \\
& \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} x5 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \text{H}90 \cdot - \text{hal}^{1.3/365} \cdot 2.2366662295036503 \cdot \wedge 10 \text{ c}7^{3.78613} \text{ Cb} \\
& \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \wedge - 1.41434649220055 \cdot \& \cdot \frac{\text{ABT}^{1.5}}{\text{hb} - x4 - \text{ABT} \times 2 \times 4} + \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \\
& \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} 5.081833302662383 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} - c16 - \frac{4.79323 \times 2}{x1} + \frac{0.0140407 \times 1}{x4} - \\
& \frac{1.75254 \text{ Cb} \times 2 \times 4}{\text{HCb} \times 1 \times 2 \times 4 \text{ L}^{0.6666666666666667}} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} + 0 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \wedge - \frac{12.95316110595605}{\left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\}} \\
& \text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \text{ Cb}}{\left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\}} \times 1 \\
& x2 \text{ J}1 \cdot - \frac{0.8 \text{ AT}}{\text{Cm} \times 2 \times 4} \times 4 \text{ J} \frac{x^4}{x^2} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\}^{1.07961} + 135.730345312 \text{ AT} \text{ c}6 \text{ x}5^2 \cdot + \\
& 135.730345312 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} - 0.00205 \cdot - 0.0010954451150103322 \text{ H} - 0.04 \cdot + 1 \cdot \text{c}4 \text{ L} \\
& \text{Cb}^4 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \wedge - 1.41434649220055 \cdot \frac{\text{ABT}^{1.5}}{\text{hb} - x4 - \text{ABT} \times 2 \times 4} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} + \frac{0.006}{\text{H}100 \cdot + x1 \text{ L}^{0.16}} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} \\
& J \frac{2.38 \text{ ABT}}{\text{Cb}} + \text{Cm} \times 10.453 + 0.4425 \text{ Cb} - 0.2862 \text{ Cm} + 0.3696 \text{ Cw} - \\
& \frac{0.003467 \times 2}{x^4} \text{ Hx}2 + 2 \cdot x4 \text{ Lx}5^2 \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\} + 569.2916975592 \text{ ABT}^{1.5} \cdot \left\{ \begin{array}{l} \text{Y} \\ \text{Z} \end{array} \right\}
\end{aligned}$$

$$\begin{aligned}
& \bar{a} \left[\int_0^1 \frac{1}{k} \left(\frac{1-x^5}{1-x} \right)^{1-2.45175} \cdot \frac{ABT}{ABT} - 9.807 \right] hb + \\
& 9.807 x^4 + 0.03969110399999999 x^{5^2} MM^{^3} \\
& 13.779184373405185 + 1 \cdot \int_0^1 \frac{1}{k} \left(\frac{1-x^5}{1-x} \right)^{1-2.45175} \cdot \frac{ABT}{ABT} - 9.807 \\
& hb + 9.807 x^4 + 0.03969110399999999 x^{5^2} MM^{^2} \\
& \left[\int_0^1 \frac{1}{k} 10.179775898399999 \right] \left[\int_0^1 \frac{1}{k} 0.93 + \int_0^1 \frac{1}{k} \frac{H1. - Cpl^{0.6024}}{H1. - Cpl^{0.6024}} \right] 0.487118 \\
& H1. + 0.011 Cstern \left[\int_0^1 \frac{1}{k} \frac{1. - Cp + \int_0^1 \frac{1}{k} \frac{0.121563}{-1. + 4. Cp}}{1. - Cp + \int_0^1 \frac{1}{k} \frac{0.121563}{-1. + 4. Cp}} \right] \\
& \int_0^1 \frac{1}{k} \frac{J x^2}{x1} \frac{1.06806}{x1} \int_0^1 \frac{1}{k} \frac{J x^{12}}{Cb x2 x4} \frac{0.36486}{x4} \int_0^1 \frac{1}{k} \frac{J x^4}{x1} \frac{0.46106}{x1} \\
& \int_0^1 \frac{1}{k} \frac{2.38 ABT}{Cb} + \int_0^1 \frac{1}{k} \frac{Cm}{x1} J 0.453 + 0.4425 Cb - 0.2862 Cm + \\
& 0.3696 Cw - \int_0^1 \frac{1}{k} \frac{0.003467 x^2}{x4} Hx2 + 2. x4LN x5^2 \\
& H3.6363748627922092 + 0.43429448190325176 \text{Log} x1 x5DL^{^2} \wedge 0.775 + \\
& \int_0^1 \frac{1}{k} 0.000025617793327426628 J - 8.3 + \int_0^1 \frac{1}{k} \frac{x1}{x3} \frac{1.691}{x3} Hx1 x2 x3L^{1.003} \\
& \int_0^1 \frac{1}{k} 0.6197720682895518 \\
& Hx1 x2 x3L^{0.724} + \\
& 0.05705477170296265 H1. + 0.49532 CbL \\
& \int_0^1 \frac{1}{k} \left[1. + 0.000928 J - 8.3 + \int_0^1 \frac{1}{k} \frac{x1}{x3} \frac{1.691}{x3} \right] \\
& Hx1 x2 x3L^{1.003} + \\
& 0.0011232166043994344 \\
& \left[\int_0^1 \frac{1}{k} x5 \int_0^1 \frac{1}{k} \frac{H90. - hal^{1.37565}}{H90. - hal^{1.37565}} \right] 2.236662295036503 * 10 c7^{3.78613} Cb \\
& \bar{a} \wedge - 1.41434649220055 \& \int_0^1 \frac{1}{k} \frac{ABT^{1.5}}{hb - x4 - \frac{ABT}{ABT} x2 x4} + \int_0^1 \frac{1}{k} \frac{1}{x1} \\
& \int_0^1 \frac{1}{k} 5.081833302662383 \int_0^1 \frac{1}{k} -c16 - \int_0^1 \frac{1}{k} \frac{4.79323 x^2}{x1} + \int_0^1 \frac{1}{k} \frac{0.0140407 x1}{x4} -
\end{aligned}$$

$$\begin{aligned}
& \frac{1.75254 \cdot Cb \cdot x^2 \cdot x^4}{H Cb \cdot x^1 \cdot x^2 \cdot x^4} + 0. \cdot \bar{a} \\
& \cos B = \frac{-13.34248601399447 + 53.59231882287779 \cdot Cn}{1} \cdot x^1 \\
& x^2 J1. = \frac{0.8 \cdot AT}{Cm \cdot x^2 \cdot x^4} \cdot x^4 J \frac{x^4}{x^2} + 135.730345312 \cdot AT \cdot c6 \cdot x5^{2.} + \\
& 135.730345312 \cdot -0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1. \cdot c4L \\
& Cb^4 \cdot \bar{a} = \frac{-1.41434649220055 \cdot \$}{hb \cdot x4 - ABT \cdot x2 \cdot x4} \cdot \frac{0.006}{H100. + x1L^{0.16}} \\
& J \frac{2.38 \cdot ABT}{Cb} + \frac{0.003467 \cdot x^2}{x^4} \cdot Cm \cdot x1 J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + 0.3696 \cdot Cw - \\
& \frac{0.003467 \cdot x^2}{x^4} \cdot Hx2 + 2. \cdot x4LN \cdot x5^{2.} + 569.2916975592 \cdot ABT^{1.5} \\
& \bar{a} = \frac{-0.566236596102145}{k^{-1.5} \cdot hb \cdot x^4} \cdot lx5 \cdot l' \cdot l - 2.45175 \cdot \cdot \frac{0.006}{H100. + x1L^{0.16}} - 9.807 \cdot hb + \\
& 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot MM^3 \cdot \\
& 13.779184373405185 + 1. \cdot lx5 \cdot l' \cdot l - 2.45175 \cdot \cdot \frac{0.006}{H100. + x1L^{0.16}} - 9.807 \cdot \\
& hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2.} \cdot MM^2 \cdot M + \\
& 10.179775898399999 \cdot 0.93 + \frac{0.487118}{H1. - Cpl^{0.6024}} \\
& H1. + 0.011 \cdot Csternl \cdot \frac{0.121563}{1. - Cp + -1. + 4. Cp} \\
& J \frac{x^2}{x^1} \cdot 1.06806 \cdot J \frac{x^{12.}}{Cb \cdot x^2 \cdot x^4} \cdot 0.36486 \cdot J \frac{x^4}{x^1} \cdot 0.46106 \cdot \\
& J \frac{2.38 \cdot ABT}{Cb} + \frac{0.003467 \cdot x^2}{x^4} \cdot Cm \cdot x1 J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x^2}{x^4} \cdot Hx2 + 2. \cdot x4LN \cdot x5^{2.} + \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5DL^{2.} \cdot ^{0.775} +
\end{aligned}$$

$$\frac{1}{k} \left(0.000012689005390940957 \cdot \text{Cb} J - 8.3 \right) + \frac{x^1}{x^3} \cdot \text{Hx1 x2 x3L}^{1.691} \cdot \frac{1}{k} \left(\text{Hx1 x2 x3L}^{1.003} \right)$$

$$\frac{1}{k} \left(0.6197720682895518 \right)$$

$$\text{Hx1 x2 x3L}^{0.724} + 0.05705477170296265 \cdot \text{H1} + 0.49532 \cdot \text{CbL}$$

$$\frac{1}{k} \left(1 \right) + 0.000928 \cdot J - 8.3 + \frac{x^1}{x^3} \cdot \frac{1}{k} \left(\text{Hx1 x2 x3L}^{1.691} \right)$$

$$\text{Hx1 x2 x3L}^{1.003} + 0.0011232166043994344$$

$$\frac{1}{k} \left(\frac{1}{x^5} \cdot \frac{1}{k} \left(\text{H90} - \text{hal}^{1.37565} \right) \right) \cdot 2.2366662295036503 \cdot *^{\wedge} 10 c 7^{3.78613} \cdot \text{Cb}$$

$$\frac{1}{k} \left(\text{a}^{\wedge} - 1.41434649220055 \right) \cdot \frac{1}{k} \left(\text{hb} - x 4 - \frac{\text{ABT}^{1.5}}{\text{ABT} x 2 x 4} \right) + \frac{1}{k} \left(\frac{1}{x^1} \right)$$

$$\frac{1}{k} \left(5.081833302662383 \right) \cdot \frac{1}{k} \left(-c 16 - \frac{4.79323 \cdot x^2}{x^1} + \frac{0.0140407 \cdot x^1}{x^4} \right) -$$

$$\frac{1}{k} \left(\frac{1.75254 \cdot \text{Cb} x 2 x 4}{\text{HCb} x 1 x 2 x 4} \right) \cdot \frac{1}{k} \left(\frac{12.95316110595605}{x^1} \right) + 0 \cdot \frac{1}{k} \left(\text{a} \right)$$

$$\text{CosB} \cdot \frac{1}{k} \left(-13.34248601399447 + 53.59231882287779 \right) \cdot \frac{1}{k} \left(\text{Cp} \right) \cdot \frac{1}{k} \left(\frac{1}{x^1} \right)$$

$$x 2 J 1 \cdot \frac{1}{k} \left(-\frac{0.8 \cdot \text{AT}}{\text{Cm} x 2 x 4} \right) \cdot \frac{1}{k} \left(\frac{1.07961}{x^2} \right) + 135.730345312 \cdot \text{AT} c 6 x 5^{2 \cdot} +$$

$$135.730345312 \cdot \frac{1}{k} \left(-0.00205 - 0.0010954451150103322 \cdot \text{H} - 0.04 + 1 \cdot c 4 \right)$$

$$\text{Cb}^4 \cdot \frac{1}{k} \left(\text{a} \right) \cdot \frac{1}{k} \left(-1.41434649220055 \right) \cdot \frac{1}{k} \left(\frac{\text{ABT}^{1.5}}{\text{hb} - x 4 - \text{ABT} x 2 x 4} \right) \cdot \frac{1}{k} \left(\frac{1}{x^1} \right) + \frac{1}{k} \left(\frac{0.006}{\text{H} 100 + x 1^{0.16}} \right)$$

$$\frac{1}{k} \left(\frac{2.38 \cdot \text{ABT}}{\text{Cb}} \right) + \frac{1}{k} \left(\text{Cm} \right) \cdot \frac{1}{k} \left(x 1 J 0.453 \right) + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + 0.3696 \cdot \text{Cw} -$$

$$\frac{1}{k} \left(\frac{0.003467 \cdot x^2}{x^4} \right) \cdot \text{Hx2} + 2 \cdot \frac{1}{k} \left(x 4 \text{LN} x 5^{2 \cdot} \right) + \frac{1}{k} \left(569.2916975592 \cdot \text{ABT}^{1.5} \right)$$

$$\frac{1}{k} \left(\frac{-0.566226520612244}{x^1} \right) \cdot \frac{1}{k} \left(\frac{1}{x^5} \right) \cdot \frac{1}{k} \left(\text{I} \right) - 2.45175 \cdot \frac{1}{k} \left(\text{ABT} \right) - 9.807 \cdot \text{hb} +$$

$$9.807 \cdot x 4 + 0.03969110399999999 \cdot x 5^{2 \cdot} \cdot \frac{1}{k} \left(\text{M}^{\wedge} 3 \right)$$

$$\begin{aligned}
& 13.779184373405185^\circ + 1.^\circ \ln x^5 + \ln | -2.45175^\circ \cdot \frac{ABT}{x} - 9.807^\circ \\
& \quad hb + 9.807^\circ x^4 + 0.03969110399999999^\circ x^5 + 2.^\circ M + \\
& \left| \frac{10.179775898399999^\circ}{x} \right| \left| \frac{0.93^\circ}{x} + \frac{H1.^\circ - Cpl^{0.60247^\circ}}{x} \right| \left| \frac{0.487118^\circ}{x} \right| \\
& \quad H1.^\circ + 0.011^\circ CsternL \left| \frac{1.^\circ - Cp + \frac{0.121563^\circ}{-1.^\circ + 4.^\circ Cp}}{x} \right| \\
& \quad J \frac{x^2}{x1} \frac{1.06806^\circ}{x} \left| \frac{Hx1^\circ}{x} \right| \frac{0.36486^\circ}{x4} \left| \frac{J \frac{x4}{x1} \frac{0.46106^\circ}{x}}{x} \right| \\
& \quad \frac{2.38^\circ ABT}{Cb} + \frac{Cm}{x1} J 0.453^\circ + 0.4425^\circ Cb - 0.2862^\circ Cm + \\
& \quad 0.3696^\circ Cw - \frac{0.003467^\circ x^2}{x4} Hx2 + 2.^\circ x4 \ln x^5 + \frac{V}{x} \\
& \quad H3.6363748627922092^\circ + 0.43429448190325176^\circ \text{Log} x \ln x^5 DL^2 + \frac{V}{x} \wedge 0.775^\circ + \frac{V}{x} \\
& \quad \left| \frac{0.00007332679259264761^\circ}{x} \right| \left| \frac{J \frac{x1}{x3} \frac{2.^\circ}{x}}{x3} \right| \left| \frac{Hx1^\circ x2 x3 L^{1.003^\circ}}{x} \right| \\
& \quad \left| \frac{0.6197720682895518^\circ}{x} \right| \\
& \quad Hx1^\circ x2 x3 L^{0.724^\circ} + \\
& \quad 0.05705477170296265^\circ \\
& \quad H1.^\circ + 0.49532^\circ CbL \\
& \quad \left| \frac{1.^\circ + 0.000928^\circ J - 8.3^\circ + \frac{J \frac{x1}{x3} \frac{1.691^\circ}{x}}{x}}{x} \right| \\
& \quad Hx1^\circ x2 x3 L^{1.003^\circ} + \\
& \quad 0.0011232166043994344^\circ \\
& \quad \left| \frac{x5}{x} \right| \left| \frac{H90.^\circ - hal^{1.37565^\circ}}{x} \right| \left| \frac{2.2366662295036503^\circ * 10 c^{7^{3.78613^\circ}} Cb}{x} \right| \\
& \quad \left| \frac{\bar{a}^\circ}{x} \right| - 1.41434649220055^\circ \& \frac{ABT^{1.5^\circ}}{hb - x^4 - \frac{ABT^\circ}{x^2 x^4}} + \frac{1}{\frac{1}{x1}} \\
& \quad \left| \frac{5.081833302662383^\circ}{x} \right| \left| \frac{-c16 - \frac{4.79323^\circ x^2}{x1} + \frac{0.0140407^\circ x1}{x4}}{x} \right| - \\
& \quad \frac{1.75254^\circ Cb x^2 x^4}{H Cb x1 x2 x4 L^{0.6666666666666666^\circ}} + 0.^\circ \bar{a} - \frac{0.05216114056695^\circ}{x1} \\
& \quad \text{Cos} B \frac{-13.34248601399447^\circ + 53.59231882287779^\circ Cp}{\frac{1}{x1}} x1
\end{aligned}$$

$$\begin{aligned}
& x^2 J_1 - \frac{0.8 \text{ AT}}{C_m x^2 x^4} x^4 J \frac{x^4}{x^2} + 135.730345312 \text{ AT} c_6 x^5 + \\
& 135.730345312 - 0.00205 - 0.0010954451150103322 \text{ H} - 0.04 + 1. \text{ c}4L \\
& C_b^4 \bar{a} - 1.41434649220055 \frac{\text{ATL}^5}{h_b x^4 - \text{ABT} x^2 x^4} \cdot \frac{\text{ABT}}{x^1} + \frac{0.006}{H100. + x1L^{0.16}} \\
& J \frac{2.38 \text{ ABT}}{C_b} + \frac{\text{ABT}}{C_m} x^1 J_0.453 + 0.4425 \text{ C}_b - 0.2862 \text{ C}_m + 0.3696 \text{ C}_w - \\
& \frac{0.003467 x^2}{x^4} \text{ H} x^2 + 2. x^4 L N x^5 + 569.2916975592 \text{ ABT}^{1.5} \\
& \bar{a} \frac{-0.566326530612214}{k - 1.5 h_b x^4} \{ l x^5 \text{ l} \text{ l} - 2.45175 \cdot \frac{\text{ABT}}{\text{ABT}} - 9.807 \text{ h}_b + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \text{ M}^3 \} \\
& 13.779184373405185 + 1. l x^5 \text{ l} \text{ l} - 2.45175 \cdot \frac{\text{ABT}}{\text{ABT}} - 9.807 \\
& h_b + 9.807 x^4 + 0.03969110399999999 x^5 \text{ M}^2 \} \\
& 10.179775898399999 \cdot 0.93 + \frac{H1. - Cpl^{0.60247}}{k} \cdot 0.487118 \\
& H1. + 0.011 \text{ Cstern} \frac{1. - Cp + \frac{0.121563}{k}}{\text{Cp}} \\
& J \frac{x^2}{x^1} \frac{1.06806}{k} \cdot J \frac{x^1}{C_b x^2 x^4} \frac{0.36486}{k} \cdot J \frac{x^4}{x^1} \frac{0.46106}{k} \\
& J \frac{2.38 \text{ ABT}}{C_b} + \frac{\text{ABT}}{C_m} x^1 J_0.453 + 0.4425 \text{ C}_b - 0.2862 \text{ C}_m + \\
& 0.3696 \text{ C}_w - \frac{0.003467 x^2}{x^4} \text{ H} x^2 + 2. x^4 L N x^5 \\
& H3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x^5 D^{2.} \wedge 0.775 - \\
& 0.00004994658790788932 \text{ C}_b J \frac{x^1}{x^3} \frac{2.}{k} \text{ H} x^1 x^2 x^3 l^{1.003} \\
& 0.6197720682895518 \\
& H x^1 x^2 x^3 l^{0.724} + \\
& 0.05705477170296265
\end{aligned}$$

$$\begin{aligned}
 &H1.\` + 0.49532\` Cbl \\
 &J_k 1.\` + 0.000928\` J - 8.3\` + \frac{x^1}{x^3} \\
 &Hx1 x2 x3 L^{1.003\`} + \\
 &0.0011232166043994344\` \\
 &H_{90.\` - \text{hal}}^{1.37565} x5 \\
 &2.2366662295036503\` * 10 c7^{3.78613\`} Cb \\
 &-\frac{1.41434649220055\`}{k} \& \frac{ABT^{1.5}}{hb - x4 - ABT x2 x4} + \frac{1}{x1} \\
 &J_k 5.081833302662383\` J - c16 - \frac{4.79323\` x2}{x1} + \frac{0.0140407\` x1}{x4} - \\
 &\frac{1.75254\` Cb x2 x4}{HCb x1 x2 x4 L^{0.6666666666666667}} + 0.\` \ddot{a} - \frac{13.953161110595605}{k x1} \\
 &CosB = \frac{-13.34248601399447\` + 53.59231882287779\` Cp}{x1} \\
 &x2 J1.\` - \frac{0.8\` AT}{Cm x2 x4} x4 J \frac{x4}{x2}^{1.07961} + 135.730345312\` AT c6 x5^{2\`} + \\
 &135.730345312\` - 0.00205\` - 0.0010954451150103322\` H - 0.04\` + 1.\` c4L \\
 &Cb^4.\` \ddot{a} - \frac{1.41434649220055\`}{hb - x4 - ABT x2 x4} \cdot \frac{ABT^{1.5}}{x1} + \frac{0.006\`}{H100.\` + x1 L^{0.16}} \\
 &J \frac{2.38\` ABT}{Cb} + C_m x1 J0.453\` + 0.4425\` Cb - 0.2862\` Cm + 0.3696\` Cw - \\
 &\frac{0.003467\` x2}{x4} Hx2 + 2.\` x4 L N x5^{2\`} + \frac{569.2916975592\` ABT^{1.5}}{k} \\
 &\ddot{a} = \frac{-0.566236530613314}{k} \frac{1}{hb - x4} |x5\` | l\` | - 2.45175\` \cdot \frac{ABT^{1.5}}{x1} - 9.807\` hb + \\
 &9.807\` x4 + 0.03969110399999999\` x5^{2\`} \wedge 3 \\
 &13.779184373405185\` + 1.\` |x5\` | l\` | - 2.45175\` \cdot \frac{ABT^{1.5}}{x1} - 9.807\` \\
 &hb + 9.807\` x4 + 0.03969110399999999\` x5^{2\`} \wedge 2 \\
 &10.179775898399999\` 0.93\` + \frac{1}{H1.\` - Cpl^{0.60247}} 0.487118\`
 \end{aligned}$$

$$\begin{aligned}
& H1. \cdot + 0.011 \cdot Csternl \left\{ \begin{array}{l} 1. \cdot - Cp + \\ -1. \cdot +4. \cdot Cp \end{array} \right\}^{0.121563} \\
& J \frac{x^2}{x1} \left\{ \begin{array}{l} 1.06806 \cdot \\ \\ \end{array} \right\} j \frac{x1^2}{Cb x2 x4} \left\{ \begin{array}{l} 0.36486 \cdot \\ \\ \end{array} \right\} J \frac{x4}{x1} \left\{ \begin{array}{l} 0.46106 \cdot \\ \\ \end{array} \right\} \\
& J \frac{2.38 \cdot ABT}{Cb} + \cdot C_m x1 J 0.453 \cdot + 0.4425 \cdot Cb - 0.2862 \cdot C_m + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x^2}{x4} Hx2 + 2. \cdot x4 Lx5^2 \cdot \\
& H3.6363748627922092 \cdot + 0.43429448190325176 \cdot \text{Log} x1 x5 D^{2.} \cdot ^{0.775} \cdot - \\
& j \frac{0.00004272967871410613 \cdot Cb^2 J \frac{x1}{x5} \cdot Hx1 x2 x3 L^{1.003} \cdot}{x5} \\
& 0.6197720682895518 \cdot \\
& Hx1 x2 x3 L^{0.724} \cdot + \\
& 0.05705477170296265 \cdot \\
& H1. \cdot + 0.49532 \cdot Cbl \\
& j \frac{1. \cdot + 0.000928 \cdot J - 8.3 \cdot + \frac{x1}{x3} \cdot 1.691 \cdot}{x3} \\
& Hx1 x2 x3 L^{1.003} \cdot + \\
& 0.0011232166043994344 \cdot \\
& j \frac{x5 \cdot H90. \cdot - hal^{1.37565} \cdot}{x5} 2.2366662295036503 \cdot * ^{10} c7^{3.78613} \cdot Cb \\
& \bar{a} \cdot - 1.41434649220055 \cdot \& \frac{ABT^{1.5} \cdot}{hb - x4 - \frac{ABT}{x2 x4}} + \frac{1}{x1} \\
& j \frac{5.081833302662383 \cdot}{x1} - c16 - \frac{4.79323 \cdot x^2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \\
& \frac{1.75254 \cdot Cb x2 x4}{H Cb x1 x2 x4 L^{0.6666666666666667} \cdot} + 0. \cdot \bar{a} \frac{12.953161110595605 \cdot}{x1} \\
& \text{Cos} B \frac{-13.34248601399447 \cdot + 53.59231882287779 \cdot C_p}{x1} \\
& x2 J1. \cdot - \frac{0.8 \cdot AT}{C_m x2 x4} x4 J \frac{x4}{x2} \cdot 1.07961 \cdot + 135.730345312 \cdot AT c6 x5^2 \cdot +
\end{aligned}$$

$$135.730345312 \sqrt{k} - 0.00205 \sqrt{k} - 0.0010954451150103322 \sqrt{k} H - 0.04 \sqrt{k} + 1 \sqrt{k} c4L$$

$$Cb^4 \cdot \bar{a}^{-1.41434649220055} \sqrt{k} \cdot \frac{ABT^{1.5}}{hb-x4-ABT \cdot x2 \cdot x4} + \frac{0.006 \sqrt{k}}{H100 \sqrt{k} + x1L^{0.16} \sqrt{k}}$$

$$J \frac{2.38 \sqrt{k} ABT}{Cb} + \sqrt{k} C_m x1 J 0.453 \sqrt{k} + 0.4425 \sqrt{k} Cb - 0.2862 \sqrt{k} C_m + 0.3696 \sqrt{k} C_w -$$

$$\frac{0.003467 \sqrt{k} x2}{x4} Hx2 + 2 \sqrt{k} x4LN x5^2 + \sqrt{k} 569.2916975592 \sqrt{k} ABT^{1.5}$$

$$\bar{a} \sqrt{k} \frac{ABT^{1.5}}{hb-x4} \sqrt{k} \cdot \sqrt{k} l x5 \sqrt{k} l - 2.45175 \sqrt{k} \cdot \sqrt{k} ABT - 9.807 \sqrt{k} hb +$$

$$9.807 \sqrt{k} x4 + 0.039691103999999999 \sqrt{k} x5^2 \sqrt{k} MM^3 \sqrt{k}$$

$$13.779184373405185 \sqrt{k} + 1 \sqrt{k} l x5 \sqrt{k} l - 2.45175 \sqrt{k} \cdot \sqrt{k} ABT - 9.807 \sqrt{k} hb + 9.807 \sqrt{k} x4 + 0.039691103999999999 \sqrt{k} x5^2 \sqrt{k} MM^2 \sqrt{k} M +$$

$$\sqrt{k} 10.179775898399999 \sqrt{k} 0.93 \sqrt{k} + \sqrt{k} H1 \sqrt{k} - Cpl^{0.6024} \sqrt{k} 0.487118 \sqrt{k}$$

$$H1 \sqrt{k} + 0.011 \sqrt{k} Cstern \sqrt{k} \cdot \sqrt{k} 1 \sqrt{k} - Cp + \sqrt{k} -1 \sqrt{k} +4 \sqrt{k} Cp \sqrt{k} 0.121563 \sqrt{k}$$

$$J \frac{x2}{x1} \sqrt{k} 1.06806 \sqrt{k} \cdot \sqrt{k} x1^2 \sqrt{k} \cdot \sqrt{k} 0.36486 \sqrt{k} \cdot \sqrt{k} x4 \sqrt{k} \cdot \sqrt{k} 0.46106 \sqrt{k} \sqrt{k}$$

$$J \frac{2.38 \sqrt{k} ABT}{Cb} + \sqrt{k} C_m x1 J 0.453 \sqrt{k} + 0.4425 \sqrt{k} Cb - 0.2862 \sqrt{k} C_m +$$

$$0.3696 \sqrt{k} C_w - \frac{0.003467 \sqrt{k} x2}{x4} Hx2 + 2 \sqrt{k} x4LN x5^2 \sqrt{k}$$

$$H3.6363748627922092 \sqrt{k} + 0.43429448190325176 \sqrt{k} Log x1 x5DL^2 \sqrt{k} \sqrt{k} 0.775 \sqrt{k} +$$

$$\sqrt{k} 6.804726352597698 \sqrt{k} \sqrt{k} \sqrt{k} -8J -8.3 \sqrt{k} + \sqrt{k} x1 \sqrt{k} 1.691 \sqrt{k} \cdot \sqrt{k} x1 \sqrt{k} 2 \sqrt{k} \cdot \sqrt{k} Hx1 x2 x3L^{1.003} \sqrt{k} \sqrt{k}$$

$$\sqrt{k} 0.6197720682895518 \sqrt{k}$$

$$Hx1 x2 x3L^{0.724} \sqrt{k} + 0.05705477170296265 \sqrt{k} H1 \sqrt{k} + 0.49532 \sqrt{k} CbL$$

$$\sqrt{k} 1 \sqrt{k} + 0.000928 \sqrt{k} J -8.3 \sqrt{k} + \sqrt{k} x1 \sqrt{k} 1.691 \sqrt{k} \sqrt{k}$$

$$Hx1 x2 x3L^{1.003} \sqrt{k} +$$

0.0011232166043994344`

$$\left(\frac{x^5}{k} \right) \left(\frac{H90 \cdot - \text{hal}}{1.37565} \right) \left(\frac{2.2366662295036503 \cdot *^{\wedge} 10 c 7^{3.78613}}{\text{Cb}} \right)$$

$$\bar{a}^{\wedge} 3 - 1.41434649220055 \cdot \left(\frac{\text{ABT}^{1.5}}{\text{hb} - x4 - \text{ABT} x2 x4} \right) + \left(\frac{1}{x1} \right)^{0.9}$$

$$\left(\frac{5.081833302662383}{k} \right) - c16 - \left(\frac{4.79323 \cdot x2}{x1} \right) + \left(\frac{0.0140407 \cdot x1}{x4} \right) -$$

$$\left(\frac{1.75254 \cdot \text{Cb} x2 x4}{\text{HCb} x1 x2 x4} \right) \left(\frac{13.851411185652}{x1} \right) + 0 \cdot \bar{a}$$

$$\text{CosB} \left(\frac{-13.34248601399447 \cdot + 53.59231882287779 \cdot \text{Cp}}{1} \right) x1$$

$$x2 J1 \cdot - \left(\frac{0.8 \cdot \text{AT}}{\text{Cm} x2 x4} \right) x4 J \left(\frac{1.07961}{x2} \right) + 135.730345312 \cdot \text{AT} c6 x5^{2 \cdot} +$$

$$135.730345312 \cdot - 0.00205 \cdot - 0.0010954451150103322 \cdot \text{H} - 0.04 \cdot + 1 \cdot c4L$$

$$\text{Cb}^4 \cdot \bar{a}^{-1.41434649220055} \cdot \left(\frac{\text{ABT}^{1.5}}{\text{hb} - x4 - \text{ABT} x2 x4} \right) \cdot \left(\frac{1}{x1} \right) + \left(\frac{0.006}{\text{H}100 \cdot + x1} \right)^{0.16}$$

$$J \left(\frac{2.38 \cdot \text{ABT}}{\text{Cb}} \right) + \left(\frac{1}{\text{Cm}} \right) x1 J0.453 \cdot + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + 0.3696 \cdot \text{Cw} -$$

$$\left(\frac{0.003467 \cdot x2}{x4} \right) \left(\frac{1}{\text{H}x2 + 2 \cdot x4 \text{LN} x5^{2 \cdot}} \right) + 569.2916975592 \cdot \text{ABT}^{1.5}$$

$$\bar{a} \left(\frac{9.566326570612245}{1.5 \cdot \text{hb} \cdot x4} \right) \left(\frac{1}{x5} \right) \cdot \left(\frac{1}{\text{H} - 2.45175} \right) \cdot \left(\frac{1}{\text{ABT}} \right) - 9.807 \cdot \text{hb} +$$

$$9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2 \cdot} \left(\frac{1}{\text{MM}^{\wedge} 3} \right) \cdot$$

$$13.779184373405185 \cdot + 1 \cdot \left(\frac{1}{x5} \right) \cdot \left(\frac{1}{\text{H} - 2.45175} \right) \cdot \left(\frac{1}{\text{ABT}} \right) - 9.807 \cdot$$

$$\text{hb} + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^{2 \cdot} \left(\frac{1}{\text{MM}^{\wedge} 2} \right) \cdot \text{M} +$$

$$\left(\frac{10.179775898399999}{k} \right) \left(\frac{0.93}{k} \right) + \left(\frac{1}{\text{H}1 \cdot - \text{Cpl}} \right)^{0.60247} \left(\frac{0.487118}{k} \right)$$

$$\text{H}1 \cdot + 0.011 \cdot \text{Cstern} \left(\frac{1}{\text{H}1 \cdot - \text{Cp} + \text{Cp}} \right)^{0.121563}$$

$$J \left(\frac{x2}{x1} \right)^{1.06806} \left(\frac{x1^2}{\text{Cb} x2 x4} \right)^{0.36486} J \left(\frac{x4}{x1} \right)^{0.46106}$$

$$\begin{aligned}
& \frac{2.38 \text{ ABT}}{\text{Cb}} + \frac{\text{Cm}}{\text{Cm}} \times 10.453 + 0.4425 \text{ Cb} - 0.2862 \text{ Cm} + \\
& 0.3696 \text{ Cw} - \frac{0.003467 \times 2}{x^4} \text{ Hx}^2 + 2. \times 4 \text{ LN} \times 5^2 \cdot \\
& \text{H}3.6363748627922092 + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{ DL}^2 \cdot 0.775 - \\
& \sqrt[4]{4.635043357852129} \cdot 8 \text{ Cb} \text{ J} - 8.3 + \frac{x^1}{x^3} \cdot 1.691 \cdot \frac{x^1}{x^3} \cdot 2. \\
& \text{Hx}^1 \times 2 \times 3 \text{ L}^{1.003} \cdot \\
& \sqrt[4]{0.6197720682895518} \text{ Hx}^1 \times 2 \times 3 \text{ L}^{0.724} + \\
& 0.05705477170296265 \cdot \\
& \text{H}1. + 0.49532 \text{ CbL} \\
& \sqrt[4]{1. + 0.000928} \text{ J} - 8.3 + \frac{x^1}{x^3} \cdot 1.691 \cdot \\
& \text{Hx}^1 \times 2 \times 3 \text{ L}^{1.003} + \\
& 0.0011232166043994344 \cdot \\
& \sqrt[4]{x^5} \cdot \sqrt[4]{\text{H}90. - \text{haL}^{1.57565}} \cdot 2.2366662295036503 \cdot 10 \text{ c}7^{3.78613} \text{ Cb} \\
& \sqrt[4]{\bar{a}} - 1.41434649220055 \cdot \frac{\text{ABT}^{1.5}}{\text{hb} - x^4 - \text{ABT} \times 2 \times 4} + \frac{1}{\sqrt[4]{\text{XT}}} \\
& \sqrt[4]{5.081833302662383} \cdot \text{c}16 - \frac{4.79323 \times 2}{x^1} + \frac{0.0140407 \times 1}{x^4} - \\
& \frac{1.75254 \text{ Cb} \times 2 \times 4}{\text{HCb} \times 1 \times 2 \times 4 \text{ L}^{0.6666666666666667}} \cdot \frac{\text{v}}{\sqrt[4]{\text{XT}}} + 0. \bar{a} \cdot \frac{13.05316110895605}{\sqrt[4]{\text{XT}}} \\
& \text{CosB} \cdot \frac{-13.34248601399447 + 53.59231882287779 \text{ Cb}}{\sqrt[4]{\text{XT}}} \cdot x^1 \\
& x^2 \text{ J}1. - \frac{0.8 \text{ AT}}{\text{Cm} \times 2 \times 4} \times 4 \text{ J} \cdot \frac{x^4}{x^2} \cdot 1.07961 \cdot + 135.730345312 \text{ AT} \text{ c}6 \times 5^2 + \\
& 135.730345312 \cdot -0.00205 - 0.0010954451150103322 \text{ H} - 0.04 + 1. \text{ c}4 \text{ L} \\
& \text{Cb}^4 \cdot \bar{a} - 1.41434649220055 \cdot \frac{\text{ABT}^{1.5}}{\text{hb} - x^4 - \text{ABT} \times 2 \times 4} \cdot \frac{\text{v}}{\sqrt[4]{\text{XT}}} + \frac{0.006}{\text{H}100. + x^1 \text{ L}^{0.16}} \cdot \sqrt[4]{\text{XT}}
\end{aligned}$$

$$\begin{aligned}
& \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \frac{\text{Cm}}{\text{Cm}} \times 1 \text{J} 0.453 + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + 0.3696 \cdot \text{Cw} - \\
& \frac{0.003467 \cdot x^2}{x^4} \text{Hx}^2 + 2 \cdot x^4 \text{LN} x^5 \cdot 2 + 569.2916975592 \cdot \text{ABT}^{1.5} \\
& \bar{a} \frac{-0.566236570612214}{k=1.5 \text{hb} \times x^4} \{ \text{lx}^5 \cdot \text{I} \cdot \text{I} - 2.45175 \cdot \text{ABT} - 9.807 \cdot \text{hb} + \\
& 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{ABT}^3 \cdot \\
& 13.779184373405185 + 1 \cdot \text{lx}^5 \cdot \text{I} \cdot \text{I} - 2.45175 \cdot \text{ABT} - 9.807 \\
& \text{hb} + 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{ABT}^2 \cdot \\
& 10.179775898399999 \cdot 0.93 + \frac{\text{H1} \cdot \text{Cpl}^{0.60247}}{\text{Cp}} \cdot 0.487118 \\
& \text{H1} \cdot + 0.011 \cdot \text{Cstern} \cdot \frac{1 \cdot \text{Cp} + \text{Cp}}{-1 \cdot \text{Cp}} \cdot 0.121563 \\
& \frac{\text{J} x^2}{x^1} \cdot 1.06806 \cdot \frac{\text{J} x^2}{\text{Cb} x^2 x^4} \cdot 0.36486 \cdot \frac{\text{J} x^4}{x^1} \cdot 0.46106 \\
& \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \frac{\text{Cm}}{\text{Cm}} \times 1 \text{J} 0.453 + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + \\
& 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x^2}{x^4} \text{Hx}^2 + 2 \cdot x^4 \text{LN} x^5 \cdot 2 \\
& \text{H} 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x^1 x^5 \text{DL}^{2.775} - \\
& \frac{\text{J} 3.965314184669049 \cdot \text{Cb}^2 \text{J} - 8.3 + \frac{\text{J} 1.691}{x^3} \cdot \frac{\text{J} 1}{x^3} \cdot 2}{\text{Hx}^1 x^2 x^3 \text{L}^{1.003}} \\
& 0.6197720682895518 \cdot \text{Hx}^1 x^2 x^3 \text{L}^{0.724} + \\
& 0.05705477170296265 \cdot \\
& \text{H1} \cdot + 0.49532 \cdot \text{CbL} \\
& \frac{\text{J} 1 \cdot + 0.000928 \cdot \text{J} - 8.3 + \frac{\text{J} 1.691}{x^3}}{\text{Hx}^1 x^2 x^3 \text{L}^{1.003}} + \\
& 0.0011232166043994344 \cdot \\
& \frac{\text{H} 90 \cdot - \text{hal}^{1.37565}}{\text{H} 90 \cdot - \text{hal}^{1.37565}} \cdot 2.2366662295036503 \cdot 10 c^7^{3.78613} \cdot \text{Cb}
\end{aligned}$$

$$\begin{aligned}
& \bar{a}^k - 1.41434649220055 \cdot \frac{ABT^{1.5}}{hb - x^4 - ABT^2 x^4} + \frac{1}{x^1} \\
& \int_k \left[5.081833302662383 \int_k - c16 - \frac{4.79323 \cdot x^2}{x^1} + \frac{0.0140407 \cdot x^1}{x^4} - \right. \\
& \left. \frac{1.75254 \cdot Cb \cdot x^2 \cdot x^4}{H Cb \cdot x^1 \cdot x^2 \cdot x^4} + 0 \cdot \bar{a} - \frac{12.95316110595695}{x^1} \right] \\
& \text{CosB} = \frac{-13.34248601399447 + 53.59231882287779 \cdot C_p}{x^1} \\
& x^2 J_1 = - \frac{0.8 \cdot AT}{C_m \cdot x^2 \cdot x^4} \cdot J \cdot \frac{x^4}{x^2} + 135.730345312 \cdot AT \cdot c_6 \cdot x^5 + \\
& 135.730345312 \cdot -0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1 \cdot c_4 L \\
& C_b^4 \cdot \bar{a} = -1.41434649220055 \cdot \frac{ABT^{1.5}}{hb - x^4 - ABT^2 x^4} \cdot \frac{1}{x^1} + \frac{0.006}{H100 \cdot x^1} \\
& J \cdot \frac{2.38 \cdot ABT}{C_b} + \frac{1}{C_m} \cdot x^1 J_0.453 + 0.4425 \cdot C_b - 0.2862 \cdot C_m + 0.3696 \cdot C_w - \\
& \frac{0.003467 \cdot x^2}{x^4} \cdot H \cdot x^2 + 2 \cdot x^4 L N x^5 + 569.2916975592 \cdot ABT^{1.5} \\
& \bar{a} = \frac{-9.566326520612214}{x^1} \cdot l x^5 \cdot l' \cdot l - 2.45175 \cdot ABT - 9.807 \cdot hb + \\
& 9.807 \cdot x^4 + 0.0396911039999999 \cdot x^5 + 3 \\
& 13.779184373405185 + 1 \cdot l x^5 \cdot l' \cdot l - 2.45175 \cdot ABT - 9.807 \\
& hb + 9.807 \cdot x^4 + 0.0396911039999999 \cdot x^5 + 2 \\
& 10.179775898399999 \cdot 0.93 + \frac{1}{H_1} - C_{pl} \cdot 0.60247 \cdot 0.487118 \\
& H_1 + 0.011 \cdot C_{stern} \cdot \frac{1}{x^1} - C_p + \frac{0.121563}{-1 + C_p} \\
& J \cdot \frac{x^2}{x^1} \cdot 1.06806 \cdot J \cdot \frac{x^1}{x^2} \cdot 0.36486 \cdot J \cdot \frac{x^4}{x^1} \cdot 0.46106 \\
& J \cdot \frac{2.38 \cdot ABT}{C_b} + \frac{1}{C_m} \cdot x^1 J_0.453 + 0.4425 \cdot C_b - 0.2862 \cdot C_m + \\
& 0.3696 \cdot C_w - \frac{0.003467 \cdot x^2}{x^4} \cdot H \cdot x^2 + 2 \cdot x^4 L N x^5 +
\end{aligned}$$

$$\begin{aligned}
& H3.6363748627922092 + 0.43429448190325176 \operatorname{Log} x + 1 x 5 D^{2.775} + \\
& 0.0005279118040677341 x^5 + 2.2366662295036503 * 10 c 7^{3.78613} \\
& H90. - hal^{1.37565} \\
& Cb \bar{a} - 1.41434649220055 \& \cdot \frac{ABT^{1.5}}{hb - x4 - ABT x2 x4} + \frac{1}{x1} \\
& J 5.081833302662383 - c16 - \frac{4.79323 x2}{x1} + \frac{0.0140407 x1}{x4} - \\
& \frac{1.75254 Cb x2 x4}{HCb x1 x2 x4L^{0.6666666666666667}} + 0. \bar{a} \frac{-13.052161110505605}{x1} \\
& CosB \frac{-13.34248601399447 + 53.59231882287779 Cb}{x1} \\
& x2 J1. - \frac{0.8 AT}{Cm x2 x4} x4 J \frac{x4}{x2}^{1.07961} + 135.730345312 AT c6 x5^{2.} + \\
& 135.730345312 - 0.00205 - 0.0010954451150103322 H - 0.04 + 1. c4L \\
& Cb^4. \bar{a}^{-1.41434649220055} \cdot \frac{ABT^{1.5}}{hb - x4 - ABT x2 x4} \cdot \frac{1}{x1} + \frac{0.006}{H100. + x1L^{0.16}} \\
& J \frac{2.38 ABT}{Cb} + \frac{1}{Cm} x1 J 0.453 + 0.4425 Cb - 0.2862 Cm + \\
& 0.3696 Cw - \frac{0.003467 x2}{x4} Hx2 + 2. x4L x5^{2.} + \\
& 569.2916975592 ABT^{1.5} \bar{a} \frac{-0.56622652902246}{x1} l x5 ' l' l - 2.45175 \cdot \frac{1}{ABT} - 9.807 \\
& hb + 9.807 x4 + 0.03969110399999999 x5^{2.} MM^3. \\
& 13.779184373405185 + 1. l x5 ' l' l - 2.45175 \cdot \frac{1}{ABT} - 9.807 hb + \\
& 9.807 x4 + 0.03969110399999999 x5^{2.} MM^2. M + \\
& 10.179775898399999 0.93 + \frac{1}{H1. - Cpl} \frac{1}{x1} \frac{1}{0.6024} 0.487118 \\
& H1. + 0.011 CsternL \frac{1}{x1} \frac{1}{-1. +4. Cb}^{0.121563}
\end{aligned}$$

$$\begin{aligned}
& \left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^1}{k C_b x^2 x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot \left(\frac{2.38 \cdot \text{ABT}}{C_b} + C_m \cdot x^1 \cdot 0.453 + 0.4425 \cdot C_b - 0.2862 \cdot C_m + \right. \\
& \left. 0.3696 \cdot C_w - \frac{0.003467 \cdot x^2}{x^4} \cdot H_x + 2 \cdot x^4 \cdot L_N \cdot x^5 \right) \\
& \left(3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \cdot x^1 \cdot x^5 \right)^{0.775}
\end{aligned}$$

$$0.6197720682895518 \cdot H_x \cdot x^2 \cdot x^3 \cdot L^{0.724} + 0.05705477170296265$$

$$H_1 + 0.49532 \cdot C_b L$$

$$\left(\frac{x^1}{k} \right)^{1.691} \cdot \left(\frac{x^1}{x^3} \right)^{1.691} \cdot \left(\frac{x^1}{x^3} \right)^{1.691}$$

$$H_x \cdot x^2 \cdot x^3 \cdot L^{1.003} +$$

$$0.0011232166043994344$$

$$\left(\frac{x^5}{k} \right)^{1.37565} \cdot 2.2366662295036503 \cdot 10^7 \cdot c^{7.78613} \cdot C_b$$

$$\bar{a}^{-1.41434649220055} \cdot \left(\frac{\text{ABT}^{1.5}}{h_b - x^4 - \text{ABT} \cdot x^2 \cdot x^4} + \frac{1}{x^1} \right)$$

$$\left(\frac{x^1}{k} \right)^{5.081833302662383} \cdot \left(\frac{x^2}{x^1} \right)^{4.79323} \cdot \left(\frac{x^1}{x^4} \right)^{0.0140407}$$

$$\left(\frac{1.75254 \cdot C_b \cdot x^2 \cdot x^4}{H C_b \cdot x^1 \cdot x^2 \cdot x^4} \right)^{0.6666666666666667} \cdot \left(\frac{12.95316110595605}{k \cdot x^1} \right) + 0 \cdot \bar{a}$$

$$\text{Cos} \left(\frac{-13.34248601399447 + 53.59231882287779 \cdot C_p}{x^1} \right)$$

$$x^2 \cdot J_1 - \left(\frac{0.8 \cdot \text{AT}}{C_m \cdot x^2 \cdot x^4} \right) \cdot \left(\frac{x^4}{x^2} \right)^{1.07961} + 135.730345312 \cdot \text{AT} \cdot c^6 \cdot x^5 +$$

$$135.730345312 \cdot \left(-0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1 \cdot c^4 \right)$$

$$C_b^4 \cdot \bar{a}^{-1.41434649220055} \cdot \left(\frac{\text{ABT}^{1.5}}{h_b - x^4 - \text{ABT} \cdot x^2 \cdot x^4} \right) \cdot \left(\frac{0.006}{H_{100} + x^1 \cdot L^{0.16}} \right)$$

$$\left(\frac{2.38 \cdot \text{ABT}}{C_b} + C_m \cdot x^1 \cdot 0.453 + 0.4425 \cdot C_b - 0.2862 \cdot C_m + 0.3696 \cdot C_w - \right.$$

$$\begin{aligned}
& \frac{0.003467 \cdot x^2}{x^4} \ln x^2 + 2 \cdot x^4 \ln x^5 + 569.2916975592 \cdot \text{ABT}^{1.5} \\
& - \frac{0.566226539612214}{x^4} \\
& \bar{a} \cdot \left\{ \frac{1}{x^5} \cdot \left| \frac{1}{x} - 2.45175 \cdot \text{ABT} \right| - 9.807 \cdot \text{hb} + \right. \\
& \quad \left. 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \right\} \\
& 13.779184373405185 + 1 \cdot \left\{ \frac{1}{x^5} \cdot \left| \frac{1}{x} - 2.45175 \cdot \text{ABT} \right| - 9.807 \cdot \right. \\
& \quad \left. \text{hb} + 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \right\} \\
& \left\{ 10.179775898399999 \cdot 0.93 + \frac{1}{x} \cdot \left(\frac{1}{x} - \text{Cpl}^{0.60247} \right) \cdot 0.487118 \right. \\
& \quad \left. \text{Hl} \cdot + 0.011 \cdot \text{Csternl} \cdot \left(\frac{1}{x} - \text{Cp} + \frac{0.121563}{x} \right) \right. \\
& \quad \left. \frac{x^2}{x^1} \cdot 1.06806 \cdot \left(\frac{x^2}{x^2} - \frac{x^2}{x^4} \right) + \frac{0.36486}{x^1} \cdot \frac{x^4}{x^1} \cdot 0.46106 \right\} \\
& \frac{2.38 \cdot \text{ABT}}{\text{Cb}} + \text{Cm} \cdot x^1 \cdot \left(0.453 + 0.4425 \cdot \text{Cb} - 0.2862 \cdot \text{Cm} + \right. \\
& \quad \left. 0.3696 \cdot \text{Cw} - \frac{0.003467 \cdot x^2}{x^4} \right) \\
& 13.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \left(x^1 \cdot x^5 \right)^{0.775}
\end{aligned}$$

Appendix J

Mathematical Form of the Fuel Weight

Wf =

$$0.00041414026809651473 \cdot \frac{\text{Cm}}{\text{a}}$$

$$\begin{aligned}
 & \left(0.014154825683162254 \cdot \text{ABT Cb}^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 \right) - \\
 & 0.35387064207905633 \cdot \text{ABT c4 Cb}^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + \\
 & x1^{3-2} \left(0.00041414026809651473 \cdot x2^2 \right) - 0.000020619655732572913 \cdot \text{Cb}^4 \cdot \frac{\text{Cm}}{\bar{a}} \\
 & \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + 0.0005154913933143228 \cdot \text{c4 Cb}^4 \cdot \\
 & \frac{\text{Cm}}{\bar{a}} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + 0.00041414026809651473 \cdot \\
 & x4 \left(0.005388349608800421 \cdot \text{Cb}^4 \cdot \frac{\text{Cm}}{\bar{a}} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 \right) - \\
 & 0.13470874022001053 \cdot \text{c4 Cb}^4 \cdot \frac{\text{Cm}}{\bar{a}} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + \\
 & 0.005263454088066636 \cdot \text{Cb}^5 \cdot \frac{\text{Cm}}{\bar{a}} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 - \\
 & 0.1315863522016659 \cdot \text{c4 Cb}^5 \cdot \frac{\text{Cm}}{\bar{a}} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 - \\
 & 0.0034042950508580147 \cdot \text{Cb}^4 \cdot \text{Cm}^{3-2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + \\
 & 0.08510737627145036 \cdot \text{c4 Cb}^4 \cdot \text{Cm}^{3-2} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + \\
 & 0.004396322329829218 \cdot \text{Cb}^4 \cdot \frac{\text{Cm}}{\bar{a}} \cdot \text{Cw} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 - \\
 & 0.10990805824573044 \cdot \text{c4 Cb}^4 \cdot \frac{\text{Cm}}{\bar{a}} \cdot \text{Cw} \bar{a}^{-1.41434649220055} \cdot \frac{\text{ABT}^5}{\text{hb-x4- ABT x2x4}} \cdot x5^2 + \\
 & 0.00041414026809651473 \cdot x2 \left(0.002652935492935065 \cdot \text{Cb}^4 \cdot \frac{\text{Cm}}{\bar{a}} \right)
 \end{aligned}$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) - \\
& 0.06632338732337661 \cdot c4 Cb^4 \cdot \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) + \\
& 0.002631727044033318 \cdot Cb^5 \cdot \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) - \\
& 0.06579317610083295 \cdot c4 Cb^5 \cdot \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) - \\
& 0.0017021475254290074 \cdot Cb^4 \cdot C_m^{3 \cdot 2} \bar{a}^{-1.41434649220055} \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) + \\
& 0.04255368813572518 \cdot c4 Cb^4 \cdot C_m^{3 \cdot 2} \bar{a}^{-1.41434649220055} \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) + \\
& 0.002198161164914609 \cdot Cb^4 \cdot C_m C_w \bar{a}^{-1.41434649220055} \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) - \\
& 0.05495402912286522 \cdot c4 Cb^4 \cdot C_m C_w \bar{a}^{-1.41434649220055} \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right) +
\end{aligned}$$

$$x1 \cdot \left(\frac{1}{k} \int_{-1}^1 C_m H90 \cdot \text{hal}^{1.37565} \cdot 7.4103484154325 \cdot *^6 AT c7^{3.78613} Cb \right)$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \cdot \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} \right) + \\
& \left(\frac{1}{x1} \int_{-1}^1 5.081833302662383 \cdot c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} \right) - \\
& \left(\frac{1.75254 \cdot Cb \cdot x2 \cdot x4}{HCb \cdot x1 \cdot x2 \cdot x4} \right)^{0.6666666666666667} \cdot \left(\frac{13.952161110595605}{k \cdot x1} \right) + 0 \cdot \bar{a} \\
& \text{CosB} = \frac{-13.34248601399447 + 53.59231882287779 \cdot C_p}{x1} \cdot \left(\frac{x4}{x2} \right)^{1.07961} +
\end{aligned}$$

$$x2 \cdot \left(\frac{1}{k} \int_{-1}^1 H90 \cdot \text{hal}^{1.37565} \cdot 9.262935519290624 \cdot *^6 c7^{3.78613} Cb \bar{a}^{-1.41434649220055} \right)$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \cdot \left(\frac{ABT^{1.5}}{hb-x4-ABT^2x4} \right) + \left(\frac{1}{x1} \int_{-1}^1 5.081833302662383 \cdot c16 - \right. \\
& \left. \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \frac{1.75254 \cdot Cb \cdot x2 \cdot x4}{HCb \cdot x1 \cdot x2 \cdot x4} \right)^{0.6666666666666667} \cdot \left(\frac{13.952161110595605}{k \cdot x1} \right) + \\
& 0 \cdot \bar{a} \cdot \text{CosB} = \frac{-13.34248601399447 + 53.59231882287779 \cdot C_p}{x1}
\end{aligned}$$

$$\begin{aligned}
& x^4 \int \frac{x^{1.07961}}{x^2} + 0.00041414026809651473 \\
& -0.12411661903448232 \cdot C_m^{(1)} x^{5.2} - 0.123124389491148 \cdot C_b \cdot C_m^{(1)} x^{5.2} + \\
& 0.07963435089800353 \cdot C_m^{(3-2)} x^{5.2} - 0.10284016803599616 \cdot C_m^{(1)} C_w x^{5.2} + \\
& \frac{0.36326815327165557 \cdot C_m^{(1)} x^{5.2}}{H100. + x1L^{0.16}} + \frac{0.36036406680336 \cdot C_b \cdot C_m^{(1)} x^{5.2}}{H100. + x1L^{0.16}} - \\
& \frac{0.2330761489697664 \cdot C_m^{(3-2)} x^{5.2}}{H100. + x1L^{0.16}} + \frac{0.30099561376389117 \cdot C_m^{(1)} C_w x^{5.2}}{H100. + x1L^{0.16}} + \\
& \frac{4.222992281782996 \cdot C_m^{(1)} x^{5.2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.}} + \\
& \frac{4.189232276589061 \cdot C_b \cdot C_m^{(1)} x^{5.2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.}} - \\
& \frac{2.7095102317735344 \cdot C_m^{(3-2)} x^{5.2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.}} + \\
& \frac{3.4990740100052347 \cdot C_m^{(1)} C_w x^{5.2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.}} + \\
& \int \frac{2.211930703567279 \cdot C_m^{(1)}}{1. - C_p + \frac{0.121563}{-1. +4. C_p}} \\
& \int \frac{x^{1.06806}}{x1} \int \frac{x^{1.2}}{C_b x2 x4} \int \frac{x^{0.36486}}{x1} \int \frac{x^{0.46106}}{x1} x^{5.2} \cdot H1. - Cpl^{0.60247} \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.} L + \\
& \int \frac{2.194247793663989 \cdot C_b \cdot C_m^{(1)}}{1. - C_p + \frac{0.121563}{-1. +4. C_p}} \\
& \int \frac{x^{1.06806}}{x1} \int \frac{x^{1.2}}{C_b x2 x4} \int \frac{x^{0.36486}}{x1} \int \frac{x^{0.46106}}{x1} x^{5.2} \cdot H1. - Cpl^{0.60247} \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.} L - \\
& \int \frac{1.4191948441731832 \cdot C_m^{(3-2)}}{1. - C_p + \frac{0.121563}{-1. +4. C_p}} \\
& \int \frac{x^{1.06806}}{x1} \int \frac{x^{1.2}}{C_b x2 x4} \int \frac{x^{0.36486}}{x1} \int \frac{x^{0.46106}}{x1} x^{5.2} \cdot H1. - Cpl^{0.60247} \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 x5DL^{2.} L + \\
& \int \frac{0.024331237739240067 \cdot C_m^{(1)} C_{stern}}{1. - C_p + \frac{0.121563}{-1. +4. C_p}}
\end{aligned}$$

$$\int \frac{x^2}{x^2} \cdot \frac{1.06806}{k} \int \frac{x^{1.2}}{k} \cdot \frac{0.36486}{k} \int \frac{x^4}{x^2} \cdot \frac{0.46106}{k} x^5 \cdot \frac{1}{k} \left\{ \begin{array}{l} \text{HH1.} \\ \text{Cpl} \end{array} \right\}^{0.60247} \\
\text{H3.6363748627922092} + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{DL}^{2.} \text{L} + \\
\int \frac{0.024136725730303878}{k} \text{Cb} \cdot \frac{0.121563}{k} \text{Cm} \text{Cstern} \int \frac{1.}{k} - \text{Cp} + \frac{-1.}{k} + \frac{+.}{k} \text{Cp} \left\{ \right.$$

$$\int \frac{x^2}{x^2} \cdot \frac{1.06806}{k} \int \frac{x^{1.2}}{k} \cdot \frac{0.36486}{k} \int \frac{x^4}{x^2} \cdot \frac{0.46106}{k} x^5 \cdot \frac{1}{k} \left\{ \begin{array}{l} \text{HH1.} \\ \text{Cpl} \end{array} \right\}^{0.60247} \\
\text{H3.6363748627922092} + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{DL}^{2.} \text{L} - \\
\int \frac{0.015611143285905016}{k} \text{Cm}^{3 \cdot 2} \text{Cstern} \int \frac{1.}{k} - \text{Cp} + \frac{-1.}{k} + \frac{+.}{k} \text{Cp} \left\{ \right.$$

$$\int \frac{x^2}{x^2} \cdot \frac{1.06806}{k} \int \frac{x^{1.2}}{k} \cdot \frac{0.36486}{k} \int \frac{x^4}{x^2} \cdot \frac{0.46106}{k} x^5 \cdot \frac{1}{k} \left\{ \begin{array}{l} \text{HH1.} \\ \text{Cpl} \end{array} \right\}^{0.60247} \\
\text{H3.6363748627922092} + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{DL}^{2.} \text{L} + \\
\int \frac{1.8327547673179891}{k} \cdot \frac{0.121563}{k} \text{Cm} \text{Cw} \int \frac{1.}{k} - \text{Cp} + \frac{-1.}{k} + \frac{+.}{k} \text{Cp} \left\{ \right.$$

$$\int \frac{x^2}{x^2} \cdot \frac{1.06806}{k} \int \frac{x^{1.2}}{k} \cdot \frac{0.36486}{k} \int \frac{x^4}{x^2} \cdot \frac{0.46106}{k} x^5 \cdot \frac{1}{k} \left\{ \begin{array}{l} \text{HH1.} \\ \text{Cpl} \end{array} \right\}^{0.60247} \\
\text{H3.6363748627922092} + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{DL}^{2.} \text{L} + \\
\int \frac{0.02016030244049788}{k} \cdot \frac{0.121563}{k} \text{Cm} \text{Cstern} \text{Cw} \int \frac{1.}{k} - \text{Cp} + \frac{-1.}{k} + \frac{+.}{k} \text{Cp} \left\{ \right.$$

$$\int \frac{x^2}{x^2} \cdot \frac{1.06806}{k} \int \frac{x^{1.2}}{k} \cdot \frac{0.36486}{k} \int \frac{x^4}{x^2} \cdot \frac{0.46106}{k} x^5 \cdot \frac{1}{k} \left\{ \begin{array}{l} \text{HH1.} \\ \text{Cpl} \end{array} \right\}^{0.60247} \\
\text{H3.6363748627922092} + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{DL}^{2.} \text{L} + \\
\int \frac{0.00041414026809651473}{k} x^2 \cdot \frac{0.0009646830697532433}{k} \cdot \frac{0.121563}{k} \text{Cm} x^5 \cdot \frac{1}{k} -$$

$$\int \frac{0.002823462643180224}{k} \cdot \frac{0.121563}{k} \text{Cm} x^5 \cdot \frac{1}{k} - \\
\text{H100.} + x^{11} \cdot \frac{0.15}{k}$$

$$\int \frac{0.032822753226970106}{k} \cdot \frac{0.121563}{k} \text{Cm} x^5 \cdot \frac{1}{k} - \\
\text{H3.6363748627922092} + 0.43429448190325176 \text{ Log} \times 1 \times 5 \text{DL}^{2.} \text{L} -$$

$$\int \frac{0.017191993447758305}{k} \cdot \frac{0.121563}{k} \text{Cm} \int \frac{1.}{k} - \text{Cp} + \frac{-1.}{k} + \frac{+.}{k} \text{Cp} \left\{ \right.$$

$$\int \frac{x^2}{x^2} \cdot \frac{1.06806}{k} \int \frac{x^{1.2}}{k} \cdot \frac{0.36486}{k} \int \frac{x^4}{x^2} \cdot \frac{0.46106}{k} x^5 \cdot \frac{1}{k} \left\{ \begin{array}{l} \text{HH1.} \\ \text{Cpl} \end{array} \right\}^{0.60247}$$

$$\begin{aligned}
& \text{HH1.}^{\cdot} - \text{Cpl}^{0.60247} \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.} \text{L} - \\
& \left\{ \begin{array}{l} 0.00018911192792534135^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cstern} \\ 1. - \text{Cp} + \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \\ \text{J} \frac{x^4}{x1} \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} \text{J} \frac{x^2}{\text{Cb x2 x4}} \\ \text{J} \frac{x^4}{\text{Cb x2 x4}} \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} \text{J} \frac{x^4}{x1} \\ x5^2. \end{array} \right\}^{0.46106} \text{HH1.}^{\cdot} - \text{Cpl}^{0.60247} \\
& \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.} \text{L} + \\
& 0.00041414026809651473^{\cdot} x4^{\cdot} - 0.2520919703479776^{\cdot} \cdot \text{Cm}^{\cdot} x5^2. - \\
& 0.246248778982296^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^2. + 0.15926870179600705^{\cdot} \text{Cm}^{3.2} x5^2. - \\
& 0.20568033607199232^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw} x5^2. + \\
& \frac{0.737830157116032^{\cdot} \cdot \text{Cm}^{\cdot} x5^2.}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} + \frac{0.72072813360672^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^2.}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} - \\
& \frac{0.4661522979395328^{\cdot} \text{Cm}^{3.2} x5^2.}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} + \\
& \frac{0.6019912275277823^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw} x5^2.}{\text{H100.}^{\cdot} + x1\text{L}^{0.16}} + \\
& \frac{8.577275576473872^{\cdot} \cdot \text{Cm}^{\cdot} x5^2.}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.}} + \\
& \frac{8.378464553178121^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^2.}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.}} - \\
& \frac{5.419020463547069^{\cdot} \text{Cm}^{3.2} x5^2.}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.}} + \\
& \frac{6.998148020010469^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw} x5^2.}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.}} + \\
& \left\{ \begin{array}{l} 4.492629380925591^{\cdot} \cdot \text{Cm}^{\cdot} \\ 1. - \text{Cp} + \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \\ \text{J} \frac{x^4}{x1} \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} \text{J} \frac{x^2}{\text{Cb x2 x4}} \\ \text{J} \frac{x^4}{\text{Cb x2 x4}} \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} \text{J} \frac{x^4}{x1} \\ x5^2. \end{array} \right\}^{0.46106} \text{HH1.}^{\cdot} - \text{Cpl}^{0.60247} \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.} \text{L} + \\
& \left\{ \begin{array}{l} 4.388495587327978^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} \\ 1. - \text{Cp} + \end{array} \right\}^{0.121563} \\
& \left\{ \begin{array}{l} \text{J} \frac{x^2}{x1} \\ \text{J} \frac{x^4}{x1} \end{array} \right\}^{1.06806} \left\{ \begin{array}{l} \text{J} \frac{x^2}{\text{Cb x2 x4}} \\ \text{J} \frac{x^4}{\text{Cb x2 x4}} \end{array} \right\}^{0.36486} \left\{ \begin{array}{l} \text{J} \frac{x^4}{x1} \\ x5^2. \end{array} \right\}^{0.46106} \text{HH1.}^{\cdot} - \text{Cpl}^{0.60247} \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2.} \text{L} -
\end{aligned}$$

$$2.8383896883463664 \cdot \text{Cm}^{3 \cdot 2} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1. + 4. \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1.2}}{\text{Cb} x^2 x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5.2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 x50l^{2.} l +$$

$$0.0494189231901815 \cdot \text{Cm} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1. + 4. \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1.2}}{\text{Cb} x^2 x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5.2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 x50l^{2.} l +$$

$$0.048273451460607755 \cdot \text{Cb} \cdot \text{Cm} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1. + 4. \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1.2}}{\text{Cb} x^2 x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5.2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 x50l^{2.} l -$$

$$0.031222286571810032 \cdot \text{Cm}^{3 \cdot 2} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1. + 4. \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1.2}}{\text{Cb} x^2 x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5.2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 x50l^{2.} l +$$

$$3.6655095346359783 \cdot \text{Cm} \cdot \text{Cw} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1. + 4. \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1.2}}{\text{Cb} x^2 x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5.2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 x50l^{2.} l +$$

$$0.04032060488099576 \cdot \text{Cm} \cdot \text{Cstern} \cdot \text{Cw} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1. + 4. \text{Cp}} \right)^{0.121563}$$

$$\frac{\int \frac{x^2}{x^1} dx}{1}^{1.06806} \cdot \frac{\int \frac{x^{1.2}}{\text{Cb} x^2 x^4} dx}{k}^{0.36486} \cdot \frac{\int \frac{x^4}{x^1} dx}{1}^{0.46106} \cdot x^{5.2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log}x1 x50l^{2.} l +$$

$$0.00041414026809651473 \cdot 135.730345312 \cdot \text{AT} c6 x5^{2.} -$$

$$\frac{0.662228354777248 \cdot \text{ABT} x^{5^2}}{\text{Cb}}$$

$$\frac{1.9382293310553598 \cdot \text{ABT} x^{5^2}}{\text{Cb} \sqrt{100} + x^{11^{0.16}}}$$

$$\frac{569.2916975592 \cdot \text{ABT}^{1.5} \bar{a}}{k \sqrt{1.5 \cdot \text{hb} \cdot x^3}}$$

$$1x5' |' | -2.45175 \cdot \text{ABT} - 9.807 \text{ hb} + 9.807 x4 + 0.039691103999999999 x5^2 \cdot \text{MM}^{\wedge}$$

$$3. \sqrt{\text{ " } |3.779184373405185 \text{ ' +}}$$

$$1. \cdot |x5' |' | -2.45175 \cdot \text{ABT} - 9.807 \text{ hb} + 9.807 x4 + 0.039691103999999999 x5^2 \cdot \text{MM}^{\wedge}$$

$$2. \cdot \text{M} +$$

$$\frac{22.531915973518558 \cdot \text{ABT} x^{5^2}}{\text{Cb} \sqrt{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 x5 \text{DL}^{\wedge}}$$

$$\frac{11.80182994106281 \cdot \text{ABT}}{k} \left[\frac{1. \cdot - \text{Cp} + \dots}{-1. +4. \text{Cp}} \right]^{0.121563}$$

$$\frac{\int \frac{x^2}{x1} \cdot 1.06806}{k} \cdot \frac{\int \frac{x1^2}{\text{Cb} x2 x4} \cdot 0.36486}{k} \cdot \frac{\int \frac{x4}{x1} \cdot 0.46106}{k} \cdot x5^2 \cdot \text{ "}$$

$$\text{HCb} \sqrt{1. \cdot - \text{Cp}} \sqrt[0.60247]{\sqrt{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 x5 \text{DL}^{\wedge}} \cdot \text{L} +$$

$$\frac{0.1298201293516909 \cdot \text{ABT} \text{Cstern}}{k} \left[\frac{1. \cdot - \text{Cp} + \dots}{-1. +4. \text{Cp}} \right]^{0.121563}$$

$$\frac{\int \frac{x^2}{x1} \cdot 1.06806}{k} \cdot \frac{\int \frac{x1^2}{\text{Cb} x2 x4} \cdot 0.36486}{k} \cdot \frac{\int \frac{x4}{x1} \cdot 0.46106}{k} \cdot x5^2 \cdot \text{ "}$$

$$\text{HCb} \sqrt{1. \cdot - \text{Cp}} \sqrt[0.60247]{\sqrt{3.6363748627922092} + 0.43429448190325176 \cdot \text{Log}@x1 x5 \text{DL}^{\wedge}} \cdot \text{L}$$

Appendix K

Mathematical Form of the Center of Gravity of the Fuel Weight

KGf =

$$7.463089026259201 \cdot 10^{-7} \cdot \frac{\text{m}^3}{\text{kg}}$$

$$\begin{aligned} & \left(0.014154825683162254 \cdot \text{ABT Cb}^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} \right) - \\ & 0.35387064207905633 \cdot \text{ABT c4 Cb}^3 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + \\ & x1^{3 \cdot 2} \cdot \left(7.463089026259201 \cdot 10^{-7} \cdot x2^2 \right) \cdot \left(-0.000020619655732572913 \cdot \text{Cb}^4 \cdot \frac{\text{m}^3}{\text{kg}} \right) \cdot \frac{\text{m}^5}{\text{m}^2} \\ & \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + 0.0005154913933143228 \cdot \text{c4 Cb}^4 \cdot \\ & \cdot \frac{\text{m}^3}{\text{kg}} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + 7.463089026259201 \cdot 10^{-7} \\ & x4 \cdot \left(0.005388349608800421 \cdot \text{Cb}^4 \cdot \frac{\text{m}^3}{\text{kg}} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} \right) - \\ & 0.13470874022001053 \cdot \text{c4 Cb}^4 \cdot \frac{\text{m}^3}{\text{kg}} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + \\ & 0.005263454088066636 \cdot \text{Cb}^5 \cdot \frac{\text{m}^3}{\text{kg}} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} - \\ & 0.1315863522016659 \cdot \text{c4 Cb}^5 \cdot \frac{\text{m}^3}{\text{kg}} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} - \\ & 0.0034042950508580147 \cdot \text{Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + \\ & 0.08510737627145036 \cdot \text{c4 Cb}^4 \cdot \text{Cm}^{3 \cdot 2} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + \\ & 0.004396322329829218 \cdot \text{Cb}^4 \cdot \frac{\text{m}^3}{\text{kg}} \cdot \text{Cw} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} - \\ & 0.10990805824573044 \cdot \text{c4 Cb}^4 \cdot \frac{\text{m}^3}{\text{kg}} \cdot \text{Cw} \cdot \bar{a}^{-1.41434649220055} \cdot \frac{\text{m}^3}{\text{kg}} \cdot \frac{\text{m}^5}{\text{m}^2} + \\ & 7.463089026259201 \cdot 10^{-7} \cdot x2 \cdot \left(0.002652935492935065 \cdot \text{Cb}^4 \cdot \frac{\text{m}^3}{\text{kg}} \right) \cdot \frac{\text{m}^5}{\text{m}^2} \end{aligned}$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.06632338732337661 \cdot c4 Cb^4 \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] + \\
& 0.002631727044033318 \cdot Cb^5 \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.06579317610083295 \cdot c4 Cb^5 \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.0017021475254290074 \cdot Cb^4 \cdot Cm^{3 \cdot 2} \bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] + \\
& 0.04255368813572518 \cdot c4 Cb^4 \cdot Cm^{3 \cdot 2} \bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] + \\
& 0.002198161164914609 \cdot Cb^4 \cdot Cm Cw \bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] - \\
& 0.05495402912286522 \cdot c4 Cb^4 \cdot Cm Cw \bar{a}^{-1.41434649220055} \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} x5^2 \right] +
\end{aligned}$$

$$x1 \left[\frac{1}{k} \right] - Cm H90 \cdot \text{hal}^{1.37565} \left[\frac{1}{k} \right] 13353.951354250588 \cdot AT c7^{3.78613} Cb$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} \right] + \\
& \left[\frac{1}{x1} \right] \left[\frac{1}{k} \right] 5.081833302662383 \left[\frac{1}{k} \right] - c16 - \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \\
& \frac{1.75254 \cdot Cb x2 x4}{HCb x1 x2 x4} \left[\frac{1}{k} \right] \left[\frac{1}{x1} \right] + 0 \cdot \bar{a}^{-1.41434649220055} \left[\frac{1}{k} \right] \left[\frac{1}{x1} \right] \\
& \text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{x1} \left[\frac{1}{k} \right] \left[\frac{1}{x1} \right] \left[\frac{1}{x2} \right] \left[\frac{1}{x4} \right]^{1.07961} +
\end{aligned}$$

$$x2 \left[\frac{1}{k} \right] - Cm H90 \cdot \text{hal}^{1.37565} \left[\frac{1}{k} \right] 16692.439192813235 \cdot c7^{3.78613} Cb \bar{a}^{-1.41434649220055}$$

$$\begin{aligned}
& \bar{a}^{-1.41434649220055} \cdot \left[\frac{ABT^{1.5}}{hb-x4-ABT^2x4} \right] + \left[\frac{1}{x1} \right] \left[\frac{1}{k} \right] 5.081833302662383 \left[\frac{1}{k} \right] - c16 - \\
& \frac{4.79323 \cdot x2}{x1} + \frac{0.0140407 \cdot x1}{x4} - \frac{1.75254 \cdot Cb x2 x4}{HCb x1 x2 x4} \left[\frac{1}{k} \right] \left[\frac{1}{x1} \right] + \\
& 0 \cdot \bar{a}^{-1.41434649220055} \left[\frac{1}{k} \right] \left[\frac{1}{x1} \right] \text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{x1} \left[\frac{1}{k} \right] \left[\frac{1}{x1} \right] \left[\frac{1}{x2} \right] \left[\frac{1}{x4} \right]^{1.07961} +
\end{aligned}$$

$$\begin{aligned}
& x^4 \int \frac{x^{1.07961}}{x^2} + 7.463089026259201 \cdot x^{-7} \\
& -0.12411661903448232 \cdot C_m^{(5)} x^{5^2} - 0.123124389491148 \cdot C_b \cdot C_m^{(5)} x^{5^2} + \\
& 0.07963435089800353 \cdot C_m^{3 \cdot 2} x^{5^2} - 0.10284016803599616 \cdot C_m^{(5)} C_w x^{5^2} + \\
& \frac{0.36326815327165557 \cdot C_m^{(5)} x^{5^2}}{H100 \cdot + x1L^{0.16}} + \frac{0.36036406680336 \cdot C_b \cdot C_m^{(5)} x^{5^2}}{H100 \cdot + x1L^{0.16}} - \\
& \frac{0.2330761489697664 \cdot C_m^{3 \cdot 2} x^{5^2}}{H100 \cdot + x1L^{0.16}} + \frac{0.30099561376389117 \cdot C_m^{(5)} C_w x^{5^2}}{H100 \cdot + x1L^{0.16}} + \\
& \frac{4.222992281782996 \cdot C_m^{(5)} x^{5^2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} + \\
& \frac{4.189232276589061 \cdot C_b \cdot C_m^{(5)} x^{5^2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} - \\
& \frac{2.7095102317735344 \cdot C_m^{3 \cdot 2} x^{5^2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} + \\
& \frac{3.4990740100052347 \cdot C_m^{(5)} C_w x^{5^2}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} + \\
& \int \frac{2.211930703567279 \cdot C_m^{(5)}}{1 \cdot - Cp + \frac{0.121563}{-1. +4. Cp}} \\
& \int \frac{x^2}{x1} \int \frac{x^{1.06806}}{k} \int \frac{x^{1.2}}{Cb x2 x4} \int \frac{x^{0.36486}}{k} \int \frac{x^4}{x1} \int \frac{x^{0.46106}}{x5^2} \int \frac{H1 \cdot - Cpl^{0.60247}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} L + \\
& \int \frac{2.194247793663989 \cdot C_b \cdot C_m^{(5)}}{1 \cdot - Cp + \frac{0.121563}{-1. +4. Cp}} \\
& \int \frac{x^2}{x1} \int \frac{x^{1.06806}}{k} \int \frac{x^{1.2}}{Cb x2 x4} \int \frac{x^{0.36486}}{k} \int \frac{x^4}{x1} \int \frac{x^{0.46106}}{x5^2} \int \frac{H1 \cdot - Cpl^{0.60247}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} L - \\
& \int \frac{1.4191948441731832 \cdot C_m^{3 \cdot 2}}{1 \cdot - Cp + \frac{0.121563}{-1. +4. Cp}} \\
& \int \frac{x^2}{x1} \int \frac{x^{1.06806}}{k} \int \frac{x^{1.2}}{Cb x2 x4} \int \frac{x^{0.36486}}{k} \int \frac{x^4}{x1} \int \frac{x^{0.46106}}{x5^2} \int \frac{H1 \cdot - Cpl^{0.60247}}{H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} \otimes 1 x5DL^2} L + \\
& \int \frac{0.024331237739240067 \cdot C_m^{(5)} C_{stern}}{1 \cdot - Cp + \frac{0.121563}{-1. +4. Cp}}
\end{aligned}$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.06806 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.36486 \quad \int_0^1 \frac{x^4}{x^4} \ln(x) dx \quad 0.46106 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.60247$$

$$H3.6363748627922092 \cdot \ln(x) + 0.43429448190325176 \cdot \ln(x) \ln(x) +$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.024136725730303878 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.121563 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.06806 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.36486 \quad \int_0^1 \frac{x^4}{x^4} \ln(x) dx \quad 0.46106 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.60247$$

$$H3.6363748627922092 \cdot \ln(x) + 0.43429448190325176 \cdot \ln(x) \ln(x) -$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.015611143285905016 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.121563 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.06806 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.36486 \quad \int_0^1 \frac{x^4}{x^4} \ln(x) dx \quad 0.46106 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.60247$$

$$H3.6363748627922092 \cdot \ln(x) + 0.43429448190325176 \cdot \ln(x) \ln(x) +$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.8327547673179891 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.121563 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.06806 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.36486 \quad \int_0^1 \frac{x^4}{x^4} \ln(x) dx \quad 0.46106 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.60247$$

$$H3.6363748627922092 \cdot \ln(x) + 0.43429448190325176 \cdot \ln(x) \ln(x) +$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.02016030244049788 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.121563 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.06806 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.36486 \quad \int_0^1 \frac{x^4}{x^4} \ln(x) dx \quad 0.46106 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.60247$$

$$H3.6363748627922092 \cdot \ln(x) + 0.43429448190325176 \cdot \ln(x) \ln(x) +$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 7.463089026259201 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.0009646830697532433 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 7.463089026259201 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.0009646830697532433 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.002823462643180224 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$H100 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.032822753226970106 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$H3.6363748627922092 \cdot \ln(x) + 0.43429448190325176 \cdot \ln(x) \ln(x) -$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.017191993447758305 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.121563 \cdot \int_0^1 \frac{x^2}{x^4} \ln(x) dx$$

$$\int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 1.06806 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.36486 \quad \int_0^1 \frac{x^4}{x^4} \ln(x) dx \quad 0.46106 \quad \int_0^1 \frac{x^2}{x^4} \ln(x) dx \quad 0.60247$$

$$\begin{aligned}
& \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} - \\
& \left\{ \begin{array}{l} 0.00018911192792534135^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cstern}^{\cdot} \\ 1. - \text{Cp} + \frac{-1. + 4. \text{Cp}}{\cdot} \end{array} \right\}^{0.121563^{\cdot}} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \cdot 1.06806^{\cdot} \\ \frac{x1^2}{\text{Cb x2 x4}} \cdot 0.36486^{\cdot} \\ \frac{x4}{x1} \cdot 0.46106^{\cdot} \end{array} \right\} x5^{2^{\cdot}} \cdot \text{H3.6363748627922092}^{\cdot} - \text{Cpl}^{0.60247^{\cdot}} \\
& \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} + \\
& \left\{ \begin{array}{l} 7.463089026259201^{\cdot} \cdot x4^{\cdot} \\ -0.2520919703479776^{\cdot} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}} \end{array} \right\} - \\
& 0.246248778982296^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}} + 0.15926870179600705^{\cdot} \text{Cm}^{3^{\cdot}2} x5^{2^{\cdot}} - \\
& 0.20568033607199232^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw} x5^{2^{\cdot}} + \\
& \frac{0.737830157116032^{\cdot} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16^{\cdot}}} + \frac{0.72072813360672^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16^{\cdot}}} - \\
& \frac{0.4661522979395328^{\cdot} \text{Cm}^{3^{\cdot}2} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16^{\cdot}}} + \\
& \frac{0.6019912275277823^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw} x5^{2^{\cdot}}}{\text{H100.}^{\cdot} + x1\text{L}^{0.16^{\cdot}}} + \\
& \frac{8.577275576473872^{\cdot} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L}} + \\
& \frac{8.378464553178121^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L}} - \\
& \frac{5.419020463547069^{\cdot} \text{Cm}^{3^{\cdot}2} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L}} + \\
& \frac{6.998148020010469^{\cdot} \cdot \text{Cm}^{\cdot} \text{Cw} x5^{2^{\cdot}}}{\text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L}} + \\
& \left\{ \begin{array}{l} 4.492629380925591^{\cdot} \cdot \text{Cm}^{\cdot} \\ 1. - \text{Cp} + \frac{-1. + 4. \text{Cp}}{\cdot} \end{array} \right\}^{0.121563^{\cdot}} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \cdot 1.06806^{\cdot} \\ \frac{x1^2}{\text{Cb x2 x4}} \cdot 0.36486^{\cdot} \\ \frac{x4}{x1} \cdot 0.46106^{\cdot} \end{array} \right\} x5^{2^{\cdot}} \cdot \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} + \\
& \left\{ \begin{array}{l} 4.388495587327978^{\cdot} \text{Cb} \cdot \text{Cm}^{\cdot} \\ 1. - \text{Cp} + \frac{-1. + 4. \text{Cp}}{\cdot} \end{array} \right\}^{0.121563^{\cdot}} \\
& \left\{ \begin{array}{l} \frac{x^2}{x1} \cdot 1.06806^{\cdot} \\ \frac{x1^2}{\text{Cb x2 x4}} \cdot 0.36486^{\cdot} \\ \frac{x4}{x1} \cdot 0.46106^{\cdot} \end{array} \right\} x5^{2^{\cdot}} \cdot \text{H3.6363748627922092}^{\cdot} + 0.43429448190325176^{\cdot} \text{Log@x1 x5DL}^{2^{\cdot}} \text{L} -
\end{aligned}$$

$$2.8383896883463664 \cdot \text{Cm}^{3 \cdot 2} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.0494189231901815 \cdot \text{Cm} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.048273451460607755 \cdot \text{Cb} \cdot \text{Cm} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l -$$

$$0.031222286571810032 \cdot \text{Cm}^{3 \cdot 2} \cdot \text{Cstern} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$3.6655095346359783 \cdot \text{Cm} \cdot \text{Cw} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$0.04032060488099576 \cdot \text{Cm} \cdot \text{Cstern} \cdot \text{Cw} \cdot \left(1 - \text{Cp} + \frac{\text{Cp}^2}{-1 + 4 \cdot \text{Cp}} \right)^{0.121563}$$

$$\left(\frac{x^2}{x^1} \right)^{1.06806} \cdot \left(\frac{x^{1 \cdot 2}}{\text{Cb} \cdot x^2 \cdot x^4} \right)^{0.36486} \cdot \left(\frac{x^4}{x^1} \right)^{0.46106} \cdot x^{5 \cdot 2}$$

$$\text{H}1 - \text{Cpl}^{0.60247} \cdot \text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}x1 \cdot x50l^{2 \cdot} \cdot l +$$

$$7.463089026259201 \cdot \text{AT} \cdot c6 \cdot x5^{2 \cdot} -$$

$$\frac{0.662228354777248 \cdot \text{ABT} x^{5^2}}{Cb} +$$

$$\frac{1.9382293310553598 \cdot \text{ABT} x^{5^2}}{Cb \cdot 100 \cdot x^{11^{0.16}}} +$$

$$569.2916975592 \cdot \text{ABT}^{1.5} \cdot \frac{-0.566236320613344}{k \cdot 1.5 \cdot \ln(x^2)}$$

$$1x5 \cdot | \cdot | - 2.45175 \cdot \text{ABT} - 9.807 \cdot hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^\wedge$$

$$3. \cdot \frac{13.779184373405185}{\{}}$$

$$1. \cdot 1x5 \cdot | \cdot | - 2.45175 \cdot \text{ABT} - 9.807 \cdot hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^\wedge$$

$$2. \cdot \text{M} +$$

$$\frac{22.531915973518558 \cdot \text{ABT} x^{5^2}}{Cb \cdot 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \cdot \text{DL}^\wedge}$$

$$11.80182994106281 \cdot \text{ABT} \cdot \frac{1. - Cp + \frac{0.121563}{-1. + 4. Cp}}{\{}}$$

$$\frac{J \cdot x^2}{x1} \cdot 1.06806 \cdot \frac{J \cdot x1^2}{Cb \cdot x2 \cdot x4} \cdot 0.36486 \cdot \frac{J \cdot x4}{x1} \cdot 0.46106 \cdot x5^2 \cdot \frac{V}{\{}}$$

$$\text{HCb} \cdot \text{H}1 \cdot - \text{Cp}^{0.60247} \cdot 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \cdot \text{DL}^\wedge \cdot \text{L} +$$

$$0.1298201293516909 \cdot \text{ABT} \cdot \text{Cstern} \cdot \frac{1. - Cp + \frac{0.121563}{-1. + 4. Cp}}{\{}}$$

$$\frac{J \cdot x^2}{x1} \cdot 1.06806 \cdot \frac{J \cdot x1^2}{Cb \cdot x2 \cdot x4} \cdot 0.36486 \cdot \frac{J \cdot x4}{x1} \cdot 0.46106 \cdot x5^2 \cdot \frac{V}{\{}}$$

$$\text{HCb} \cdot \text{H}1 \cdot - \text{Cp}^{0.60247} \cdot 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log}@x1 \cdot x5 \cdot \text{DL}^\wedge \cdot \text{L} \cdot \frac{V}{\{}}$$

Appendix L

Mathematical Form of the Cargo Weight and Its Center of Gravity

WCargo =

$$- 1873.9520982571798 \cdot x_1 x_2 + 0.601404 \cdot Ntd + 0.11631177431999998 \cdot x_3L$$

KGCargo =

$$\begin{aligned} & 12 \cdot H - 82.6702 \cdot H + 0.050117 \cdot Ntd x_1 x_2 + 1.83 \cdot H + 1.22 \cdot Ntd + x_3L + \\ & 5.934274199999999 \cdot H - 148.6129 \cdot H + 0.0196 \cdot x_1 x_2 x_3L \\ & 1.83 \cdot H - 1.4709133333333333 \cdot \text{IntegerPart}[0.75 \cdot H] - 0.4098360655737705 \cdot x_3L \cdot \\ & H - 1873.9520982571798 \cdot x_1 x_2 + 0.601404 \cdot Ntd x_1 x_2 + 0.11631177431999998 \cdot x_1 x_2 x_3L \end{aligned}$$

Appendix M

Mathematical Form of the Total Weight

$$\begin{aligned}
 \text{WT} = & 39850.524901742814 + 0.6383652303382383 \cdot \text{Hx1 x2 x3L}^{0.724} + 0.07889472174276087 \cdot \text{Hx1 x2 x3L}^{1.003} + \\
 & 0.00007321430177728209 \cdot \text{J} - 8.3 + \frac{x^1}{x^3} \cdot \text{Hx1 x2 x3L}^{1.691} - 0.022091145858630486 \cdot x5^2 + \\
 & 23.215308859290154 \cdot c6 \cdot x5^2 + \frac{0.06465701226916239 \cdot x5^2}{\text{H100} + x1^{0.16}} + \\
 & \cdot \frac{\text{H100}}{x1} \cdot \text{J} \cdot 0.0001079651852345908 \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 - \\
 & 0.0026991296308647703 \cdot c4 \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 \cdot \text{H} + \\
 & \frac{\text{H100}}{x1} \cdot 98.00880709606643 \cdot \bar{a}^{-\frac{0.1717473344813689}{1.633444}} \\
 & \left\{ \begin{array}{l} x^5 \\ -74.19790666961431 + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \end{array} \right\} \\
 & \frac{\text{H100}}{x1} \cdot 3.779184373405185 + \\
 & \left\{ \begin{array}{l} x^5 \\ -74.19790666961431 + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \end{array} \right\} \\
 & x1^{3 \cdot 2} \cdot \text{Jx4 J8.493900788895479} \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 - \\
 & 0.000021234751972238696 \cdot c4 \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 \cdot \text{H} + \\
 & x2 \cdot \text{J4.208126958189767} \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 - \\
 & 0.000010520317395474418 \cdot c4 \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 \cdot \text{H} + \\
 & \frac{\text{H100}}{x4} \cdot \text{Jx2}^2 \cdot \text{J} - 1.9411718128986405 \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 + \\
 & 4.852929532246601 \cdot \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} \cdot x5^2 \cdot \text{H} + \\
 & x1 \cdot \frac{\text{H100}}{x1} - \frac{\text{H100}}{\text{hal}^{1.37565}} \cdot 2.1411550979250913 \cdot \bar{a}^9 \cdot c7^{3.78613} \\
 & \bar{a}^{-28.836809873393417} \cdot \frac{\text{H100}}{-5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4} +
 \end{aligned}$$

$$\begin{aligned}
& \left(\frac{5.081833302662383}{x^1} - 1.256962155395367 - \frac{4.79323 x^2}{x^1} + \right. \\
& \left. \frac{0.0140407 x^1}{x^4} - \frac{1.5497631635965172 x^2 x^4}{H x^1 x^2 x^4 L^{0.666666666666667}} \right) + \\
& 0. \bar{a} \left(\frac{-12.952161110595605}{x^1} \right) \text{CosB} \left(\frac{24.150700234490834}{x^1} \right) \left(\frac{x^4}{x^2} \right)^{1.07961} + \\
& \left(\frac{x^2}{x^4} \right)^{3.9719016423885973} \cdot x^{5^2} - \frac{1.162507797772272 \cdot x^6 x^{5^2}}{H100. + x11^{0.16}} - \\
& \frac{0.000013514153149102662 x^{5^2}}{H3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x5DL^2} - \\
& \left(\frac{0.00001671335405669323}{0.3004 + 0.00014938078291814948 x^1} \right)^{0.121563} \\
& \left(\frac{x^2}{x^1} \right)^{1.06806} \left(\frac{x^1}{x^2 x^4} \right)^{0.36486} \left(\frac{x^4}{x^1} \right)^{0.46106} x^{5^2} + \\
& H3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x5DL^2 + \\
& x^2 \left(0.601404 \text{ Ntd} + 0.11631177431999998 x^3 + \frac{6.405319911589467 x^6}{H90. - \text{hal}^{1.37565}} \right) + \\
& c^{7.78613} \bar{a} \left(-28.836809873393417 \right) \$ \left(-5.7 + x^4 + 7.463243262818116 x^2 x^4 \right) + \\
& \left(\frac{5.081833302662383}{x^1} - 1.256962155395367 - \frac{4.79323 x^2}{x^1} + \right. \\
& \left. \frac{0.0140407 x^1}{x^4} - \frac{1.5497631635965172 x^2 x^4}{H x^1 x^2 x^4 L^{0.666666666666667}} \right) + \\
& 0. \bar{a} \left(\frac{-12.952161110595605}{x^1} \right) \text{CosB} \left(\frac{24.150700234490834}{x^1} \right) \left(\frac{x^4}{x^2} \right)^{1.07961} - \\
& 0.00008610400308489546 x^{5^2} + \frac{0.0002520117163460355 x^{5^2}}{H100. + x11^{0.16}} + \\
& \frac{0.002929636202522662 x^{5^2}}{H3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x5DL^2} + \\
& \left(\frac{0.003623167990612766}{0.3004 + 0.00014938078291814948 x^1} \right)^{0.121563} \\
& \left(\frac{x^2}{x^1} \right)^{1.06806} \left(\frac{x^1}{x^2 x^4} \right)^{0.36486} \left(\frac{x^4}{x^1} \right)^{0.46106} x^{5^2} + \\
& H3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x5DL^2 +
\end{aligned}$$

$$\begin{aligned}
& x^4 - 0.00017379676682674635 x^5 + \frac{0.00050867346388316 x^5}{100 + x^{1.16}} + \\
& \frac{0.0059133290176417354 x^5}{3.6363748627922092 + 0.43429448190325176 \log(x) x^{50}} + \\
& \frac{0.007313189397452305}{0.3004 + 0.00014938078291814948 x^{0.121563}} \\
& \left(\frac{x^2}{x^1} \right)^{1.06806} \left(\frac{x^2}{x^2 x^4} \right)^{0.36486} \left(\frac{x^4}{x^1} \right)^{0.46106} x^{5.2} \\
& 3.6363748627922092 + 0.43429448190325176 \log(x) x^{50} \\
& 0.0011569131025314175 x^5 - \frac{1.5466546977017742 \cdot 10^7 x^{3.78613}}{90 - \frac{1}{x^{1.37565}}} \\
& \frac{\bar{a}^3}{x^3} - 28.836809873393417 \frac{-5.7 + x^4 + 7.463243262818116 x^2 x^4}{x^4} + \\
& \frac{5.081833302662383}{x^1} - 1.256962155395367 - \frac{4.79323 x^2}{x^1} + \\
& \frac{0.0140407 x^1}{x^4} - \frac{1.5497631635965172 x^2 x^4}{x^1 x^2 x^4} \\
& 0. \bar{a} \frac{-12.95316110595605}{x^1} \cos \left(\frac{24.150700234490834}{x^1} \right) x^2 \\
& J_1 - \frac{334.27762039660064}{x^2 x^4} x^4 + 56056.632613855996 x^6 x^5 + \\
& 135.730345312 - 0.00205 + 0.000010018884088099185 - 0.0002504721022024796 \\
& c_4 \bar{a} - 28.836809873393417 \frac{-5.7 + x^4 + 7.463243262818116 x^2 x^4}{x^4} \cdot \frac{0.006}{100 + x^{1.16}} \\
& \frac{191.70788141720897}{x^1} + x^1 \frac{0.7472141154913118}{x^2} - \\
& \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 \\
& x^5 + \frac{236656.06714975525 \bar{a}}{1 - 8.55 + x^4} \\
& \frac{-74.19790666961431 + 9.807 x^4 + 0.03969110399999999 x^5}{x^5} x^3 \\
& 13.779184373405185 + 1. \log(x) - 74.19790666961431 + 9.807 x^4 +
\end{aligned}$$

$$\begin{aligned}
& 0.0396911039999999 \cdot x^5 + 10.179775898399999 \cdot x^4 \\
& + 0.93 \cdot x^3 + 1.1501585856866496 \cdot x^2 + 0.3004 \cdot x + 0.00014938078291814948 \\
& + 0.121563 \cdot x^0 \\
& + 191.70788141720897 \cdot x^2 - 0.7472141154913118 \cdot x^2 - \\
& 0.0034468327443611183 \cdot x^2 + 1.5082155619600681 \cdot x^4 + 1.5082155619600681 \cdot x^5 \\
& + 3.6363748627922092 \cdot x^3 + 0.43429448190325176 \cdot \log(x) \cdot x^5 + 0.775 \cdot x^5 \\
& + 0.7516377676290127 \cdot x^5 + 3.6363748627922092 \cdot x^3 + 0.43429448190325176 \cdot \log(x) \cdot x^5 \\
& + 0.929572722327802 \cdot x^3 \\
& + 0.3004 \cdot x + 0.00014938078291814948 \cdot x^0 \\
& + 1.06806 \cdot x^2 \\
& + 0.36486 \cdot x^2 \\
& + 0.46106 \cdot x^4 \\
& + 1.5082155619600681 \cdot x^5
\end{aligned}$$

Appendix N

Mathematical Form of the Center of Gravity of the Total Weight

KG =

$$\begin{aligned}
 & 20862.238499999996 \cdot x^3 + 0.19150956910147154 \cdot Hx1 \cdot x2 \cdot x3L^{0.724} + \\
 & 0.02366841652282826 \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + 0.00002196429053318463 \cdot J - 8.3 \cdot \frac{x1^{1.691}}{x3} \\
 & Hx1 \cdot x2 \cdot x3L^{1.003} + 12 \cdot H - 82.6702 + 0.050117 \cdot Ntd \cdot x1 \cdot x2 \cdot H1.83 + 1.22 \cdot Ntd + x3L + \\
 & 5.9342741999999999 \cdot H - 148.6129 + 0.0196 \cdot x1 \cdot x2 \cdot x3L \\
 & H1.83 - 1.4709133333333333 \cdot \text{IntegerPart} @ 0.75 - 0.4098360655737705 \cdot x3DL + \\
 & x3 \cdot 0.6415570564899296 \cdot Hx1 \cdot x2 \cdot x3L^{0.724} - 0.00043983364370304626 \cdot x1 \cdot Hx1 \cdot x2 \cdot x3L^{0.724} + \\
 & 0.03817242216801743 \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + 0.00003542400777192017 \cdot J - 8.3 \cdot \frac{x1^{1.691}}{x3} \\
 & Hx1 \cdot x2 \cdot x3L^{1.003} + 0.00001890727785509613 \cdot J \frac{x1^2}{x3} \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + \\
 & 1.7545953849529205 \cdot \wedge - 8J - 8.3 \cdot \frac{x1^{1.691}}{x3} \cdot J \frac{x1^2}{x3} \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + \\
 & 0.0005437491581897661 \cdot x5 \cdot \left[\frac{H90 \cdot \text{hal}^{1.3/565}}{k} \right] \cdot 1.5466546977017742 \cdot \wedge 10c7^{3.78613} \cdot \bar{a} \wedge \\
 & - 28.836809873393417 \cdot \$ \left[\frac{6.387672141474464}{x1^{1.9}} - \frac{24.358395841320416 \cdot x2}{x1^{1.9}} + \right. \\
 & \left. \frac{0.07135249685269171 \cdot x1}{x4 \cdot x1^{1.9}} - \frac{7.875638056004192 \cdot x2 \cdot x4}{Hx1 \cdot x2 \cdot x4L^{0.6666666666666667} \cdot x1^{1.9}} + \right. \\
 & \left. 0 \cdot \bar{a} \cdot \left[\frac{-12.052161110505605}{x1^{1.9}} \right] \cdot \text{CosB} \left[\frac{24.150700234490834}{x1} \right] \right. \\
 & \left. x1 \cdot J \frac{x4^{1.07961}}{x2} \cdot H - 334.27762039660064 + 1 \cdot x2 \cdot x4L \right. \\
 & \left. 56056.632613855996 \cdot c6 \cdot x5^2 + 135.730345312 \cdot J - 0.00205 \right.
 \end{aligned}$$

$$10.000010018884088099185 - 0.0002504721022024796 c4l$$

$$\bar{a} - 28.836809873393417 \cdot \frac{0.006}{100 + x1^{0.16}}$$

$$191.70788141720897 + x1 \cdot 0.7472141154913118 x^2 -$$

$$\frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 x^5^2 +$$

$$236656.06714975525 \bar{a} \cdot \frac{-0.1717473244913686}{-8.57 x^4} |x^5 \cdot |' H - 74.19790666961431 +$$

$$9.807 x^4 + 0.03969110399999999 x^5^2 \cdot \text{LMM}^3$$

$$13.779184373405185 + 1 \cdot |x^5 \cdot |' H - 74.19790666961431 +$$

$$9.807 x^4 + 0.03969110399999999 x^5^2 \cdot \text{LMM}^2 \cdot M +$$

$$10.179775898399999 \cdot 0.93 + 1.1501585856866496$$

$$\frac{0.3004 + 0.00014938078291814948 x^1}{0.121563 x^2} \cdot \frac{1.06806}{x^1}$$

$$\frac{x^1 x^2}{x^2 x^4} \cdot \frac{0.36486}{x^4} \cdot \frac{0.46106}{x^1} \cdot 191.70788141720897 +$$

$$x1 \cdot 0.7472141154913118 x^2 - \frac{0.0034468327443611183 x^2}{x^4} +$$

$$1.5082155619600681 x^4 x^5^2$$

$$H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x1 x5 \cdot \text{DL}^2 \cdot 0.775 +$$

$$3.090765690163143 \cdot 10^{-10} \cdot \frac{1.5466546977017742 \cdot 10^7 c^{7.78613}}{H90 - \text{hal}^{1.37565}}$$

$$\bar{a} - 28.836809873393417 \cdot \frac{-5.7 + x4 + 7.463243262818116 x2 x4}{x1}$$

$$\frac{5.081833302662383}{x1} - \frac{1.256962155395367}{x1} - \frac{4.79323 x2}{x1} +$$

$$\frac{0.0140407 x1}{x4} - \frac{1.5497631635965172 x2 x4}{Hx1 x2 x4^{1.666666666666667}}$$

$$0 \cdot \bar{a} \cdot \frac{-12.05216115555665}{x1} \cdot \text{Cos} B \cdot \frac{24.150700234490834}{x1}$$

$$x2 J1 - \frac{334.27762039660064}{x2 x4} \cdot \frac{x4}{x2} \cdot \frac{1.07961}{x2} +$$

$$56056.632613855996 \cdot c6 x5^2 + 135.730345312$$

$$\int -0.00205 + 10.000010018884088099185 - 0.0002504721022024796 \cdot c4$$

$$\bar{a} - 28.836809873393417 \cdot \frac{-5.7 + x^4 + 7.463243262818116 x^2 x^4}{x^1} + \frac{0.006}{1100 + x^{11} 0.16}$$

$$\int 191.70788141720897 + x \int 0.7472141154913118 x^2 -$$

$$\frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4$$

$$x5^2 + \int 236656.06714975525 \bar{a} - \frac{0.171733341813688}{8.35}$$

$$\int -74.19790666961431 + 9.807 x^4 + 0.03969110399999999 x5^2 - 3.779184373405185 + 1 \cdot |x5| \cdot | -74.19790666961431 + 9.807 x^4 +$$

$$0.03969110399999999 x5^2 \cdot \text{LIM}^2 \cdot \text{M} + \int 10.179775898399999$$

$$\int 0.93 + 1.1501585856866496 \int \frac{1}{0.3004 + 0.00014938078291814948 x^1} 0.121563$$

$$\int \frac{x^2}{x^1} 1.06806 \int \frac{x^2}{x^2 x^4} 0.36486 \int \frac{x^4}{x^1} 0.46106$$

$$\int 191.70788141720897 + x \int 0.7472141154913118 x^2 -$$

$$\frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 x5^2$$

$$\int 3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} x^1 x5^2 \cdot \int 2 +$$

$$0.0003470739307594252 \int x5 \int \frac{1}{190 - \text{hal} 1.37565} \int 1.5466546977017742 \cdot 10 c7^{3.78613}$$

$$\bar{a} - 28.836809873393417 \cdot \frac{-5.7 + x^4 + 7.463243262818116 x^2 x^4}{x^1}$$

$$\frac{6.387672141474464}{x^1} - \frac{24.358395841320416 x^2}{x^1 x^1}$$

$$\frac{0.07135249685269171 x^1}{x^4 x^1} - \frac{7.875638056004192 x^2 x^4}{1 x^1 x^2 x^4 0.666666666666667 x^1} +$$

$$0 \cdot \bar{a} \cdot \frac{12.85316118585605}{x^1} \cdot \text{CosB} \frac{24.150700234490834}{x^1}$$

$$\begin{aligned}
& x^4 \int \frac{1.07961}{x^2} dx - 334.27762039660064 + 1. x^2 x^4 \int \frac{y}{x^2} dx + \\
& 56056.632613855996 c_6 x^{5.2} + 135.730345312 \\
& \int -0.00205 + 0.000010018884088099185 - 0.0002504721022024796 c_4 dx \\
& a - 28.836809873393417 \cdot \frac{1}{x^2} + \frac{0.006}{100 + x^2} \int \frac{y}{x^{0.16}} dx \\
& \int 191.70788141720897 + x^1 \int 0.7472141154913118 x^2 - \\
& \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 \int x^{5.2} dx + \\
& \int 236656.06714975525 a - \frac{0.1717473344813688}{x^3} \int x^5 dx - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^{5.2} \int \frac{y}{x^3} dx + \\
& 13.779184373405185 + 1. \int x^5 dx - 74.19790666961431 + 9.807 x^4 + \\
& 0.03969110399999999 x^{5.2} \int \frac{y}{x^2} dx + \\
& \int 10.179775898399999 \int 0.93 + 1.1501585856866496 \\
& \int \frac{0.3004 + 0.00014938078291814948 x^1}{x^1} \int \frac{y}{x^1} dx \\
& \int \frac{x^2}{x^1} \int \frac{1.06806}{x^2} dx + \int \frac{x^2}{x^2 x^4} \int \frac{0.36486}{x^4} dx + \int \frac{x^4}{x^1} \int \frac{0.46106}{x^1} dx \\
& \int 191.70788141720897 + x^1 \int 0.7472141154913118 x^2 - \\
& \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 \int x^{5.2} dx + \\
& 3.6363748627922092 + 0.43429448190325176 \int \frac{y}{x^2} dx \int \frac{y}{x^1} dx + \\
& \int 39850.524901742814 + 0.601404 \int \frac{y}{x^2} dx + 0.11631177431999998 \\
& x^1 \\
& x^2 \\
& x^3 + \\
& 1.03 \\
& \int 0.6197720682895518 \int x^1 x^2 x^3 \int x^{0.724} dx + \\
& 0.07659681722598143 \\
& \int 1. + 0.000928 \int \frac{y}{x^3} dx - 8.3 + \int \frac{x^1}{x^3} \int \frac{1.691}{x^1} dx
\end{aligned}$$

$$\begin{aligned}
& Hx1 x2 x3L^{1.003} + 0.0011232166043994344 \\
& \left[x5 \right] \left[90. - haL^{1.37565} \right] \left[1.5466546977017742 \cdot 10^7 c^{73.78613} \bar{a} \right] - 28.836809873393417 \\
& \$ \left[-5.7 + x4 + 7.463243262818116 x2 x4 \right] + \left[\frac{1}{x1} \right]^{0.9} \\
& \left[5.081833302662383 \right] \left[-1.256962155395367 \right] - \frac{4.79323 x2}{x1} + \\
& \frac{0.0140407 x1}{x4} - \frac{1.5497631635965172 x2 x4}{Hx1 x2 x4L^{1.666666666666667}} \\
& 0. \bar{a} \left[\frac{-12.05314114585665}{x1} \right] \text{CosB} \left[\frac{24.150700234490834}{x1} \right] \\
& x1 x2 J1. - \frac{334.27762039660064}{x2 x4} x4 J \frac{x4^{1.07961}}{x2} + \\
& 56056.632613855996 c6 x5^2 + 135.730345312 \left[-0.00205 \right] + \\
& H0.000010018884088099185 - 0.0002504721022024796 c4L \\
& \bar{a} - 28.836809873393417 \left[\frac{1}{x1} \right] \cdot \left[\frac{0.006}{H100. + x1L^{0.16}} \right] \\
& \left[191.70788141720897 + x1 \right] \left[0.7472141154913118 x2 - \right. \\
& \left. \frac{0.0034468327443611183 x2^2}{x4} + 1.5082155619600681 x4 x5^2 \right] + \\
& \left[236656.06714975525 \bar{a} - \frac{0.1717473214812688}{x3 x4} \right] \left[x5 \right] \left[1 - 74.19790666961431 + \right. \\
& \left. 9.807 x4 + 0.03969110399999999 x5^2 \right] \text{LMM}^3 \\
& \left[13.779184373405185 + 1. \right] \left[x5 \right] \left[1 - 74.19790666961431 + \right. \\
& \left. 9.807 x4 + 0.03969110399999999 x5^2 \right] \text{LMM}^2 \\
& \left[10.179775898399999 \right] \left[0.93 + 1.1501585856866496 \right. \\
& \left. \frac{J}{0.3004} + 0.00014938078291814948 x1 \right] \frac{0.121563}{x1} \frac{J x2^{1.06806}}{x1} \\
& \left[\frac{x1^{12}}{x2 x4} \right] \left[\frac{0.36486}{x1} \right] \left[\frac{0.46106}{x1} \right] \left[191.70788141720897 + \right. \\
& \left. x1 \left[0.7472141154913118 x2 - \frac{0.0034468327443611183 x2^2}{x4} + \right. \right. \\
& \left. \left. 1.5082155619600681 x4 x5^2 \right] \right]
\end{aligned}$$

$$\begin{aligned}
& 3.6363748627922092 + 0.43429448190325176 \operatorname{Log} x + 1.5466546977017742 x^{10} c^{7.78613} \\
& 0.00041414026809651473 x^{1.37565} - 1.5466546977017742 x^{10} c^{7.78613} \\
& \bar{a}^{-28.836809873393417} \left(-5.7 x^4 + 7.463243262818116 x^2 x^4 \right) + \\
& 5.081833302662383 x^{1.9} - 1.256962155395367 x - \frac{4.79323 x^2}{x^1} + \\
& \frac{0.0140407 x^1}{x^4} - \frac{1.5497631635965172 x^2 x^4}{x^1 x^2 x^4} + \\
& 0. \bar{a}^{-17.8531411885605} \cos \left(\frac{24.150700234490834}{x^1} \right) + \\
& x^2 J_1 - \frac{334.27762039660064 x^4}{x^2 x^4} x^4 J_1^{1.07961} + \\
& 56056.632613855996 c^6 x^5 + 135.730345312 \\
& -0.00205 + 0.000010018884088099185 - 0.0002504721022024796 c^4 \\
& \bar{a}^{-28.836809873393417} \left(-5.7 x^4 + 7.463243262818116 x^2 x^4 \right) \cdot \frac{0.006}{x^1} + \frac{0.006}{100 x^{1.16}} \\
& 191.70788141720897 + x^1 \left(0.7472141154913118 x^2 - \right. \\
& \left. \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 \right) \\
& x^5 + 236656.06714975525 \bar{a}^{-8.55} \\
& -74.19790666961431 x^5 + 9.807 x^4 + 0.03969110399999999 x^5 \\
& 3.779184373405185 + \\
& 1. \left(-74.19790666961431 x^5 + 9.807 x^4 + 0.03969110399999999 x^5 \right)^2 + \\
& 10.179775898399999 \left(0.93 + 1.1501585856866496 \right) \\
& \frac{0.121563}{0.3004 + 0.00014938078291814948 x^1}
\end{aligned}$$

$$\int_0^1 \frac{x^2}{x^1} dx + 1.06806 \int_0^1 \frac{x^{1.2}}{x^2 x^4} dx + 0.36486 \int_0^1 \frac{x^4}{x^1} dx + 0.46106 \int_0^1 \frac{x^4}{x^1} dx$$

$$= 191.70788141720897 + x \int_0^1 0.7472141154913118 x^2 -$$

$$\frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 x^5 x^2$$

$$= 3.6363748627922092 + 0.43429448190325176 \log(x) x^5$$

Appendix O

Mathematical Form of the Annual Building Cost

Abc =

$$\begin{aligned}
 & 751.5897375985036 \cdot Hx1 \cdot x2 \cdot x3L^{0.5429999999999999} + 219.041457381057 \cdot Hx1 \cdot x2 \cdot x3L^{0.6516} + \\
 & 165.5863587991675 \cdot Hx1 \cdot x2 \cdot x3L^{0.724} + 3.7845343417976673 \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + \\
 & 0.0035120478691882356 \cdot J - 8.3 + \frac{x1}{x3} \cdot Hx1 \cdot x2 \cdot x3L^{1.003} + \\
 & 3.8290775754094026 \cdot \frac{1}{kk} \cdot 1 + 0.000928 \cdot J - 8.3 + \frac{x1}{x3} \cdot Hx1 \cdot x2 \cdot x3L^{1.003} \cdot \frac{0.85}{\{}} + \\
 & 22902.936148711604 \cdot \frac{1}{k} \cdot 2.2604108721379874 \cdot Hx1 \cdot x2 \cdot x3L^{0.1666666666666666} + \\
 & 0.5373968269457794 \cdot \frac{1}{k} \cdot x5 \cdot \frac{1}{k} \cdot H90 \cdot - \cdot hal^{1.37565} \cdot \frac{1}{k} \cdot 1.5466546977017742 \cdot * \wedge 10 c^{7.78613} \cdot \bar{a} \wedge \\
 & - 28.836809873393417 \cdot \$ \cdot \frac{1}{k} \cdot -5.7 + x4 + 7.463243262818116 \cdot x2 \cdot x4 - \\
 & \frac{6.387672141474464}{x1} - \frac{24.358395841320416 \cdot x2}{x1} + \\
 & \frac{0.07135249685269171 \cdot x1}{x4} - \frac{7.875638056004192 \cdot x2 \cdot x4}{Hx1 \cdot x2 \cdot x4L^{0.6666666666666667}} + \\
 & 0 \cdot \bar{a} \cdot \frac{1}{k} \cdot \frac{1}{x1} \cdot \frac{1}{\{}} \cdot \text{CosB} \cdot \frac{24.150700234490834}{x1} \cdot \frac{1}{\{}} \\
 & x1 \cdot \frac{x4}{x2} \cdot H - 334.27762039660064 + 1 \cdot x2 \cdot x4L + \\
 & 56056.632613855996 \cdot c6 \cdot x5^{2.2} + 135.730345312 \cdot \\
 & \frac{1}{k} \cdot -0.00205 + H0.000010018884088099185 - 0.0002504721022024796 \cdot c4L \\
 & \bar{a} - 28.836809873393417 \cdot \frac{1}{k} \cdot \frac{1}{x1} \cdot \frac{1}{\{}} \cdot \frac{0.006}{H100 \cdot + x1L^{0.16}} \cdot \frac{1}{\{}} \\
 & \frac{1}{k} \cdot 191.70788141720897 + x1 \cdot \frac{1}{k} \cdot 0.7472141154913118 \cdot x2 - \\
 & \frac{0.0034468327443611183 \cdot x2^2}{x4} + 1.5082155619600681 \cdot x4 \cdot x5^{2.2} +
 \end{aligned}$$

$$\begin{aligned}
& \int_K 236656.06714975525 \bar{a}^{-\frac{127127246829285}{8.55 \times 4}} |x5' |' H - 74.19790666961431' + \\
& 9.807' x4 + 0.03969110399999999' x5^2 \cdot \sqrt[3]{\dots} \\
& 13.779184373405185' + 1.' |x5' |' H - 74.19790666961431' + \\
& 9.807' x4 + 0.03969110399999999' x5^2 \cdot \sqrt[2]{\dots} + \\
& \int_K 10.179775898399999' \int_K 0.93' + 1.1501585856866496' \\
& \int_K \frac{0.3004 + 0.00014938078291814948' x1^{0.121563}}{x1} \int_K \frac{x2^{1.06806}}{x1} \\
& \int_K \frac{x1^{2.36486}}{x2 x4} \int_K \frac{x4^{0.46106}}{x1} \int_K 191.70788141720897' + \\
& x1 \int_K 0.7472141154913118' x2 - \frac{0.0034468327443611183' x2^2}{x4} + \\
& 1.5082155619600681' x4 \sqrt[3]{x5^2} \sqrt[4]{\dots} \\
& H3.6363748627922092' + 0.43429448190325176' \text{Log} x1 x5 \sqrt[2]{\dots} \sqrt[3]{\dots} \sqrt[4]{\dots} \\
& 0.56' + 11.464252576067247' x5 \int_K \int_K \int_K 1.5466546977017742' *^{\wedge} 10 \\
& c7^{3.78613} \bar{a}^{\int_K} - 28.836809873393417' \$ \frac{-5.7' + x4 + 7.463243262818116' x2 x4}{\dots} \\
& \frac{6.387672141474464' \int_K}{x1} - \frac{24.358395841320416' x2}{x1} + \\
& \frac{0.07135249685269171' x1}{x4} - \frac{7.875638056004192' x2 x4}{Hx1 x2 x4} + \\
& 0.' \bar{a}^{-\frac{127127246829285}{8.55 \times 4}} \text{Cos} B \frac{24.150700234490834' \int_K}{x1} \\
& x1 \int_K \frac{x4^{1.07961}}{x2} H - 334.27762039660064' + 1.' x2 x4 \sqrt[3]{\dots} + \\
& 56056.632613855996' c6 x5^2' + 135.730345312' \\
& \int_K -0.00205' + H0.000010018884088099185' - 0.0002504721022024796' c4L \\
& \bar{a}^{-28.836809873393417'} \frac{\dots}{-5.7' + x4 + 7.463243262818116' x2 x4} \cdot \frac{\dots}{x1} + \frac{0.006' \int_K}{H100.' + x1 L^{1.16}} \sqrt[3]{\dots} \\
& \int_K 191.70788141720897' + x1 \int_K 0.7472141154913118' x2 -
\end{aligned}$$

$$\begin{aligned}
& \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 \\
& x^5 + \frac{236656.06714975525}{k} a - \frac{0.1717473344812688}{1.855 + x^4} \\
& \frac{-74.19790666961431 x^5 + 9.807 x^4 + 0.03969110399999999 x^5}{k} \cdot 3. \\
& 13.779184373405185 + 1. \text{lx5} \cdot 1' \cdot \text{H} - 74.19790666961431 + 9.807 x^4 + \\
& 0.03969110399999999 x^5 \cdot \text{LMM}^2 \cdot \text{M} + \frac{10.179775898399999}{k} \\
& \frac{0.93 + 1.1501585856866496}{k} \cdot \frac{0.3004 + 0.00014938078291814948 x^1}{0.121563} \\
& \frac{x^2}{x^1} \cdot 1.06806 \cdot \frac{x^1}{x^2} \cdot \frac{x^1}{x^4} \cdot 0.36486 \cdot \frac{x^4}{x^1} \cdot 0.46106 \\
& \frac{191.70788141720897}{k} + x^1 \cdot \frac{0.7472141154913118 x^2}{k} - \\
& \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 x^5 \\
& \text{H}3.6363748627922092 + 0.43429448190325176 \text{Log} x^1 x^5 \text{DL}^2 \cdot \text{H}^0.6
\end{aligned}$$

Appendix P

Mathematical Form of the Annual Operating Cost

Aoc =

$$Ss + H700 \cdot H0.3572 + 0.0187 \cdot x1L H20 + 0.0029000000000000002 \cdot x1 \cdot x2 \cdot x3L \cdot x5L \cdot \\ H104.1833333333332 + 0.28061479207009726 \cdot x5 + x1 H5.454166666666667 + \\ H0.0374 + 0.000139213888888889 \cdot Ntd \cdot x2 + 0.00002692402183333333 \cdot x2 \cdot x3L \cdot x5LL +$$

$$1.4 \cdot \left\{ \frac{10000}{k} + 0.007 \cdot \left\{ \frac{3937.158241252898}{k} \cdot Hx1 \cdot x2 \cdot x3L^{0.542999999999999} \right\} \right\} +$$

$$1147.43567662251 \cdot Hx1 \cdot x2 \cdot x3L^{0.6516} + 1340.5493954673384 \cdot Hx1 \cdot x2 \cdot x3L^{0.724} +$$

$$30.63872689039257 \cdot \left\{ \frac{1}{k} + 0.000928 \cdot J - 8.3 \right\} + \left\{ \frac{x1}{x3} \right\}^{1.691} \cdot \left\{ \frac{Hx1 \cdot x2 \cdot x3L^{1.003}}{k} \right\} +$$

$$20.058395662226516 \cdot \left\{ \frac{1}{kk} + 0.000928 \cdot J - 8.3 \right\} + \left\{ \frac{x1}{x3} \right\}^{1.691} \cdot \left\{ \frac{Hx1 \cdot x2 \cdot x3L^{1.003}}{k} \right\}^{0.85} +$$

$$81.3442803654393 \cdot \left\{ \frac{x5}{k} \right\} \cdot \left\{ \frac{H90 \cdot x5 - hal^{1.37565}}{k} \right\}$$

$$\left\{ \frac{1.5466546977017742 \cdot 10^7 \cdot c7^{3.78613} \cdot \bar{a}^3}{k} \right\} - 28.836809873393417 \cdot$$

$$\$ \left\{ \frac{-5.7 \cdot x4 + 7.463243262818116 \cdot x2 \cdot x4}{1} \right\} + \left\{ \frac{1}{x1} \right\}^{0.9}$$

$$\left\{ \frac{5.081833302662383}{k} \right\} - 1.256962155395367 \cdot \left\{ \frac{4.79323 \cdot x2}{x1} \right\} +$$

$$\left\{ \frac{0.0140407 \cdot x1}{x4} \right\} - \left\{ \frac{1.5497631635965172 \cdot x2 \cdot x4}{Hx1 \cdot x2 \cdot x4L^{0.666666666666667}} \right\} +$$

$$0 \cdot \bar{a} \cdot \left\{ \frac{13.053161110505605}{k \cdot x1} \right\} \cdot \text{CosB} \cdot \left\{ \frac{24.150700234490834}{1} \right\}$$

$$x1 \cdot x2 \cdot J1 \cdot \left\{ \frac{334.27762039660064}{x2 \cdot x4} \right\} \cdot \left\{ \frac{x4}{x2} \right\}^{1.07961} +$$

$$56056.632613855996 \cdot c6 \cdot x5^2 + 135.730345312 \cdot \left\{ \frac{1}{k} \right\} - 0.00205 +$$

$$H0.000010018884088099185 - 0.0002504721022024796 \cdot c4L$$

$$\bar{a} - 28.836809873393417 \cdot \left\{ \frac{-5.7 \cdot x4 + 7.463243262818116 \cdot x2 \cdot x4}{1} \right\} \cdot \left\{ \frac{1}{x1} \right\} +$$

$$\left\{ \frac{0.006}{H100 \cdot x1L^{0.16}} \right\} \cdot \left\{ \frac{191.70788141720897}{k} \right\} +$$

$$\begin{aligned}
& x^1 \sqrt[4]{0.7472141154913118} x^2 - \frac{0.0034468327443611183 x^2}{x^4} + \\
& 1.5082155619600681 x^4 \sqrt[5]{x^5} + \\
& \sqrt[4]{236656.06714975525} \sqrt[5]{\frac{-0.171747234483268}{-8.55+x^4}} |x^5| |x^5| - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \sqrt[3]{\text{LMM}^3} + \\
& 13.779184373405185 + 1. |x^5| |x^5| - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \sqrt[2]{\text{LMM}^2} + \\
& \sqrt[4]{10.179775898399999} \sqrt[4]{0.93} + 1.1501585856866496 \\
& \sqrt[4]{\frac{0.3004}{0.3004} + \frac{0.00014938078291814948}{0.00014938078291814948} x^1} \sqrt[4]{\frac{0.121563}{0.121563} x^2} \sqrt[4]{\frac{1.06806}{1.06806} x^1} \\
& \sqrt[4]{\frac{x^1}{x^2} x^4} \sqrt[4]{\frac{0.36486}{0.36486} x^4} \sqrt[4]{\frac{0.46106}{0.46106} x^1} |191.70788141720897| + \\
& x^1 \sqrt[4]{0.7472141154913118} x^2 - \frac{0.0034468327443611183 x^2}{x^4} + \\
& 1.5082155619600681 x^4 \sqrt[5]{x^5} + \\
& |3.6363748627922092| + 0.43429448190325176 \text{Log}[x^1 x^5] \sqrt[2]{x^5} \sqrt[2]{x^5} + \\
& 45187.655615079246 \sqrt[4]{2.2604108721379874} |x^1 x^2 x^3|^{0.16666666666666666} + \\
& 0.5373968269457794 \\
& \sqrt[4]{x^5} \sqrt[4]{\frac{1}{90} - \text{hal}^{1.37563}} \sqrt[4]{1.5466546977017742} *^{10} c^{7^{3.78613}} \sqrt[4]{\frac{1}{90} - \text{hal}^{1.37563}} - 28.836809873393417 \\
& \$ \sqrt[4]{-5.7 + x^4 + 7.463243262818116 x^2 x^4} + \sqrt[4]{\frac{1}{x^1} x^1} \\
& \sqrt[4]{5.081833302662383} \sqrt[4]{-1.256962155395367} - \sqrt[4]{\frac{4.79323 x^2}{x^1}} + \\
& \frac{0.0140407 x^1}{x^4} - \frac{1.5497631635965172 x^2 x^4}{|x^1 x^2 x^4|^{0.66666666666666667}} \sqrt[4]{\frac{1}{x^1} x^1} + \\
& 0. \sqrt[4]{\frac{-43.953161110895605}{x^1} x^1} \text{Cos} \sqrt[4]{\frac{24.150700234490834}{x^1} x^1} \\
& x^1 x^2 \sqrt[4]{\frac{334.27762039660064}{x^2 x^4}} x^4 \sqrt[4]{\frac{x^4}{x^2} x^2} \sqrt[4]{\frac{1.07961}{x^2} x^2} +
\end{aligned}$$

$$56056.632613855996 c6 x5^{2^} + 135.730345312^$$

$$\int_k -0.00205^ + H0.000010018884088099185^ - 0.0002504721022024796^ c4L$$

$$\bar{a} - 28.836809873393417^ \cdot \frac{1}{x1} + \frac{0.006^}{H100.^ + x1L^{0.16}}$$

$$\int_k 191.70788141720897^ + x1 \int_k 0.7472141154913118^ x2 -$$

$$\frac{0.0034468327443611183^ x2^}{x4} + 1.5082155619600681^ x4 \frac{xy}{x1} x5^{2^} +$$

$$\int_k 236656.06714975525^ \bar{a} \frac{-0.17177314813655^}{1=8.55^ x4} |x5^ |' H - 74.19790666961431^ +$$

$$9.807^ x4 + 0.03969110399999999^ x5^{2^} LMM^3.^ \frac{y}{x1}$$

$$13.779184373405185^ + 1.^ |x5^ |' H - 74.19790666961431^ +$$

$$9.807^ x4 + 0.03969110399999999^ x5^{2^} LMM^2.^ M +$$

$$\int_k 10.179775898399999^ \int_k 0.93^ + 1.1501585856866496^$$

$$\int_k \frac{0.3004^ + 0.00014938078291814948^ x1}{0.121563^} \int_k \frac{x2^{1.06806^}}{x1}$$

$$\int_k \frac{x^{2^}}{x2 x4} \frac{0.36486^}{x1} \int_k \frac{x^4}{x1} \frac{0.46106^}{x1} \int_k 191.70788141720897^ +$$

$$x1 \int_k 0.7472141154913118^ x2 - \frac{0.0034468327443611183^ x2^}{x4} +$$

$$1.5082155619600681^ x4 \frac{xy}{x1} x5^{2^} \frac{y}{x1}$$

$$H3.6363748627922092^ + 0.43429448190325176^ \text{Log}x1 x5DL^{2^} \frac{xy}{x1} \wedge 0.2^ \frac{y}{x1}$$

$$0.8^ + 1688.75^ \int_k 2.2604108721379874^ Hx1 x2 x3L^{0.1666666666666666^} +$$

$$0.5373968269457794^$$

$$\int_k x5 \int_k \frac{1.5466546977017742^ * \wedge 10 c7^{3.78613^} \bar{a} \wedge}{H90.^ - hal^{1.37565^}} \int_k - 28.836809873393417^$$

$$\frac{\$}{-5.7^ + x4 + 7.463243262818116^ x2 x4} + \frac{1}{x1} \frac{0.9^}{x1}$$

$$\int_k 5.081833302662383^ \int_k - 1.256962155395367^ - \frac{4.79323^ x2}{x1} +$$

$$\frac{0.0140407^ x1}{x4} - \frac{1.5497631635965172^ x2 x4}{Hx1 x2 x4L^{0.6666666666666667^}} \frac{xy}{x1} +$$

$$\begin{aligned}
& 0. \bar{a} \cos \left(\frac{24.150700234490834}{x^2} \right) \\
& x^2 J_1 - \frac{334.27762039660064}{x^2 x^4} x^4 J_2 + \frac{1.07961}{x^2} \\
& 56056.632613855996 c_6 x^{5^2} + 135.730345312 \\
& \int_k -0.00205 + H_0.000010018884088099185 - 0.0002504721022024796 c_4 \\
& \bar{a}^{-28.836809873393417} \cdot \frac{0.006}{x^2} + \frac{0.006}{100. + x^2} \\
& \int_k 191.70788141720897 + x^2 \int_k 0.7472141154913118 x^2 - \\
& \frac{0.0034468327443611183 x^2}{x^4} + 1.5082155619600681 x^4 x^{5^2} + \\
& \int_k 236656.06714975525 \bar{a}^{-0.17177334481368} |x^5 - 1| H - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^{5^2} \text{LIM}^3 \\
& 13.779184373405185 + 1. |x^5 - 1| H - 74.19790666961431 + \\
& 9.807 x^4 + 0.03969110399999999 x^{5^2} \text{LIM}^2 \\
& \int_k 10.179775898399999 \int_k 0.93 + 1.1501585856866496 \\
& \int_k \frac{0.3004 + 0.00014938078291814948}{x^2} + \frac{0.121563}{x^2} \frac{1.06806}{x^2} \\
& \int_k \frac{x^2}{x^2 x^4} \frac{0.36486}{x^4} \frac{0.46106}{x^2} \int_k 191.70788141720897 + \\
& x^2 \int_k 0.7472141154913118 x^2 - \frac{0.0034468327443611183 x^2}{x^4} + \\
& 1.5082155619600681 x^4 x^{5^2} \text{LIM}^2 \\
& H_3.6363748627922092 + 0.43429448190325176 \text{Log} x^2 x^{5^2} \text{LIM}^2
\end{aligned}$$

Appendix Q

Mathematical Form of the Annual Fuel Cost

Afc =

$$\begin{aligned}
 & 11.595927506702413 \cdot H - 0.3572 \cdot x_1 - 0.0187 \cdot x_1^5 \\
 & - 2.2366662295036503 \cdot c_7^{3.78613} \cdot C_b \cdot \bar{a} - 1.41434649220055 \cdot \\
 & \left(\frac{ABT^{1.5}}{-hb + x_4 + ABT \cdot x_2 \cdot x_4} + \frac{1}{x_1} \right) \cdot 5.081833302662383 \cdot \\
 & - c_16 - \frac{4.79323 \cdot x_2}{x_1} + \frac{0.0140407 \cdot x_1}{x_4} - \frac{1.75254 \cdot C_b \cdot x_2 \cdot x_4}{H \cdot C_b \cdot x_1 \cdot x_2 \cdot x_4^{0.6666666666666667}} + \\
 & 0. \cdot \bar{a} \cdot \cos \beta \cdot \frac{-13.34248601399447 \cdot + 53.59231882287779 \cdot C_p}{x_1} \\
 & x_1 \cdot x_2 \cdot J_1 \cdot \left(\frac{0.8 \cdot AT}{C_m \cdot x_2 \cdot x_4} \cdot x_4 \cdot \frac{x_4^{1.07961}}{x_2} + 135.730345312 \cdot AT \cdot c_6 \cdot x_5^2 \right) + \\
 & 135.730345312 \cdot -0.00205 \cdot -0.0010954451150103322 \cdot H - 0.04 \cdot + 1 \cdot c_4 \\
 & C_b^4 \cdot \bar{a}^{-1.41434649220055} \cdot \left(\frac{ABT^{1.5}}{-hb + x_4 + ABT \cdot x_2 \cdot x_4} \right) \cdot \frac{1}{x_1} + \frac{0.006}{H \cdot 100 \cdot + x_1^{1.16}} \\
 & \frac{2.38 \cdot ABT}{C_b} \cdot \frac{1}{C_m} \cdot x_1 \cdot J_0.453 \cdot + 0.4425 \cdot C_b - 0.2862 \cdot C_m + 0.3696 \cdot C_w - \frac{0.003467 \cdot x_2}{x_4} \\
 & H \cdot x_2 + 2 \cdot x_4 \cdot x_5^2 + 569.2916975592 \cdot ABT^{1.5} \cdot \bar{a} \cdot \left(\frac{1}{x_1} \right) \\
 & 1 \cdot x_5 \cdot | \cdot | - 2.45175 \cdot \frac{1}{ABT} - 9.807 \cdot hb + 9.807 \cdot x_4 + 0.03969110399999999 \cdot x_5^2 \cdot \\
 & 3 \cdot \left(13.779184373405185 \cdot + 1 \cdot | x_5 \cdot | \cdot | - 2.45175 \cdot \frac{1}{ABT} - 9.807 \cdot hb + \right. \\
 & \left. 9.807 \cdot x_4 + 0.03969110399999999 \cdot x_5^2 \cdot \right) \cdot H + \\
 & 10.179775898399999 \cdot 0.93 \cdot + \frac{1}{H \cdot 1} \cdot \frac{1}{C_p^{0.60247}} \cdot 0.487118 \cdot H \cdot + 0.011 \cdot C_{stern}
 \end{aligned}$$

$$1. \cdot - C_p + \left\{ \begin{array}{l} 0.121563 \\ \vdots \\ \vdots \\ \vdots \end{array} \right\} \cdot \left\{ \begin{array}{l} x_2 \\ x_1 \end{array} \right\}^{1.06806} + \left\{ \begin{array}{l} x_1^2 \\ C_b x_2 x_4 \end{array} \right\}^{0.36486}$$

$$\left\{ \begin{array}{l} x_4 \\ x_1 \end{array} \right\}^{0.46106} \cdot \left\{ \begin{array}{l} 2.38 \\ C_b \end{array} \right\} \cdot \left\{ \begin{array}{l} \text{ABT} \\ \vdots \\ \vdots \\ \vdots \end{array} \right\} + \left\{ \begin{array}{l} \vdots \\ \vdots \\ \vdots \\ \vdots \end{array} \right\} \cdot x_1 \cdot 0.453 + 0.4425 \cdot C_b -$$

$$0.2862 \cdot C_m + 0.3696 \cdot C_w - \frac{0.003467 \cdot x_2}{x_4} \cdot \left\{ \begin{array}{l} \text{Hx2} \\ \vdots \\ \vdots \\ \vdots \end{array} \right\} + 2. \cdot x_4 \cdot x_5^2 \cdot \left\{ \begin{array}{l} \vdots \\ \vdots \\ \vdots \\ \vdots \end{array} \right\}$$

$$\text{H}3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x_1 x_5 \text{DL}^2 \cdot \left\{ \begin{array}{l} \vdots \\ \vdots \\ \vdots \\ \vdots \end{array} \right\}$$

$$\text{H} - 104.18333333333332 + \text{H} - 0.5226568450555555 + 0.3500246608611111 \cdot C_b \cdot x_5 +$$

$$x_1 \text{H} - 5.454166666666667 + \text{H} - 0.0374 - 0.000139213888888889 \cdot \text{Ntd} x_2 +$$

$$\text{H}4.998 \cdot \text{H}^{-6} - 0.00004616344444444444 \cdot C_b \cdot x_2 x_3 \cdot x_5 \text{LL}$$

$$\begin{aligned}
& \frac{0.003467 x^2}{x^4} \ln(x^2 + 2 x^4 \ln x^5) + 569.2916975592 \text{ ABT}^{1.5} \\
& \bar{a} \left\{ \frac{-0.566226539612314}{1.5} \right\} \ln x^5 + \ln | -2.45175 \cdot \text{ABT} - 9.807 \text{ hb} + \\
& 9.807 x^4 + 0.03969110399999999 x^5 \ln^3 \\
& 13.779184373405185 + 1 \ln x^5 + \ln | -2.45175 \cdot \text{ABT} - 9.807 \\
& \text{hb} + 9.807 x^4 + 0.03969110399999999 x^5 \ln^2 \\
& 10.179775898399999 \ln 0.93 + \frac{1}{\ln | - \text{Cpl}^{0.60247} |} 0.487118 \\
& \text{Hl} + 0.011 \text{ Cstern} \left\{ \frac{1}{1 - \text{Cp} + \frac{0.121563}{\text{Cp}}} \right\} \\
& \frac{J x^2}{x^1} \frac{1.06806}{k} \frac{J x^2}{k \text{ Cb} x^2 x^4} \frac{0.36486}{V} \frac{J x^4}{x^1} \frac{0.46106}{W} \\
& \frac{2.38 \text{ ABT}}{\text{Cb}} + \text{Cm} x^1 J 0.453 + 0.4425 \text{ Cb} - 0.2862 \text{ Cm} + \\
& 0.3696 \text{ Cw} - \frac{0.003467 x^2}{x^4} \ln(x^2 + 2 x^4 \ln x^5) \\
& \text{H} 3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x^5 \ln^2 \ln^0.6 \\
& 45187.655615079246 \frac{2.2604108721379874 \ln x^1 x^2 x^3 \ln^{0.16666666666666666}}{k} + \\
& 0.5373968269457794 \\
& \frac{1}{k} x^5 \frac{1}{k} \frac{1}{\text{H} 90 - \text{hal}^{1.37565}} \frac{2.2366662295036503 \cdot 10 c 7^{3.78613} \text{ Cb} \bar{a}^\wedge}{k} \\
& -1.41434649220055 \cdot \frac{\text{ABT}^{1.5}}{-\text{hb} + x^4 + \frac{\text{ABT} x^2 x^4}{x^1}} + \frac{1}{\frac{1}{x^1}} \\
& \frac{1}{k} \left\{ 5.081833302662383 \right\} - c 16 - \frac{4.79323 x^2}{x^1} + \frac{0.0140407 x^1}{x^4} - \\
& \frac{1.75254 \text{ Cb} x^2 x^4}{\text{H} \text{Cb} x^1 x^2 x^4 \ln^{0.66666666666666666}} + 0. \bar{a} \frac{1}{k} \frac{1}{x^1} \\
& \text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \text{ Cp}}{1 \frac{1}{x^1}} x^1
\end{aligned}$$

$$\begin{aligned}
& x2 J1 \cdot - \frac{0.8 \text{ AT}}{Cm x2 x4} x4 J \frac{x4}{x2} + 135.730345312 \text{ AT} c6 x5^2 + \\
& 135.730345312 - 0.00205 - 0.0010954451150103322 \text{ H} - 0.04 + 1 \cdot c4L \\
& Cb^4 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^{1.5}}{-hb x4 + ABT x2 x4} x1 + \frac{0.006}{H100. + x1L^{0.16}} \\
& J \frac{2.38 \text{ ABT}}{Cb} + C_{\text{in}} x1 J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm + \\
& 0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} Hx2 + 2 \cdot x4L x5^2 + \\
& 569.2916975592 \text{ ABT}^{1.5} \bar{a}^{-\frac{0.566326530612216}{-1.5 hb x4}} x5 \cdot | \cdot | - 2.45175 \cdot \text{ABT} - \\
& 9.807 \text{ hb} + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^3 \cdot \\
& 13.779184373405185 + 1 \cdot | x5 \cdot | \cdot | - 2.45175 \cdot \text{ABT} - 9.807 \text{ hb} + \\
& 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{MM}^2 \cdot \text{M} + \\
& 10.179775898399999 \cdot | 0.93 + \frac{H1.}{-Cpl^{0.60247}} | \cdot | 0.487118 \text{ H1.} + 0.011 \cdot CsternL \\
& | 1. - Cp + \frac{0.121563}{-1. +4. Cp} | \cdot | J \frac{x2}{x1} \cdot | \cdot | J \frac{x1^2}{Cb x2 x4} \cdot | \cdot | \cdot | \cdot | \\
& J \frac{x4}{x1} \cdot | \cdot | \frac{0.46106}{\{ \{ \} } J \frac{2.38 \text{ ABT}}{Cb} + C_{\text{in}} x1 J0.453 + 0.4425 \cdot Cb - \\
& 0.2862 \cdot Cm + 0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} Hx2 + 2 \cdot x4L x5^2 \cdot \\
& H3.6363748627922092 + 0.43429448190325176 \cdot \text{Log} @ x1 x5DL^2 \cdot \wedge 0.2 \cdot \\
& 0.8 + 1688.75 \cdot 2.2604108721379874 \cdot Hx1 x2 x3L^{0.166666666666666666} + \\
& 0.5373968269457794 \cdot \\
& x5 \cdot | \cdot | \cdot | \cdot | 2.2366662295036503 \cdot * \wedge 10 c7^{3.78613} \cdot Cb
\end{aligned}$$

$$\begin{aligned}
& \bar{a}^k - 1.41434649220055 \cdot \frac{ABT^{1.5}}{-hb + x^4 + ABT^2 x^4} + \frac{1}{x^1} \\
& \int_k \left[5.081833302662383 \int_k -c16 - \frac{4.79323 \cdot x^2}{x^1} + \frac{0.0140407 \cdot x^1}{x^4} - \right. \\
& \quad \left. \frac{1.75254 \cdot Cb \cdot x^2 \cdot x^4}{HCb \cdot x^1 \cdot x^2 \cdot x^4} + 0. \bar{a} \right] \\
& \text{CosB} = \frac{-13.34248601399447 + 53.59231882287779 \cdot C_p}{x^1} \\
& x^2 J_1 - \frac{0.8 \cdot AT}{C_m \cdot x^2 \cdot x^4} + \frac{1.07961 \cdot x^4}{x^2} + 135.730345312 \cdot AT \cdot c_6 \cdot x^5 \cdot x^2 + \\
& 135.730345312 \cdot -0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1 \cdot c_4 L \\
& C_b^4 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^{1.5}}{-hb+x^4+ABT^2 x^4} \cdot \frac{1}{x^1} + \frac{0.006}{H100. + x^{1L^{0.16}}} \\
& \frac{2.38 \cdot ABT}{C_b} + C_m \cdot x^1 J_0.453 + 0.4425 \cdot C_b - 0.2862 \cdot C_m + \\
& 0.3696 \cdot C_w - \frac{0.003467 \cdot x^2}{x^4} \\
& 569.2916975592 \cdot ABT^{1.5} \cdot \bar{a} \cdot \frac{1}{x^5} \cdot | - 2.45175 \cdot \frac{1}{ABT} - \\
& 9.807 \cdot hb + 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{MM}^3 \\
& 13.779184373405185 + 1 \cdot |x^5 \cdot | - 2.45175 \cdot \frac{1}{ABT} - 9.807 \cdot hb + \\
& 9.807 \cdot x^4 + 0.03969110399999999 \cdot x^5 \cdot \text{MM}^2 \cdot \text{M} + \\
& 10.179775898399999 \int_k 0.93 + \frac{1}{H1. - Cpl} \int_k 0.487118 \cdot H1. + 0.011 \cdot Csternl \\
& \int_k 1. - Cp + \frac{0.121563}{-1. + 4. Cp} \int_k \frac{1.06806}{x^1} \int_k \frac{1.06806}{x^1} \int_k \frac{0.36486}{Cb \cdot x^2 \cdot x^4} \\
& \int_k \frac{0.46106}{x^1} \int_k \frac{2.38 \cdot ABT}{Cb} + C_m \cdot x^1 J_0.453 + 0.4425 \cdot C_b - \\
& 0.2862 \cdot C_m + 0.3696 \cdot C_w - \frac{0.003467 \cdot x^2}{x^4}
\end{aligned}$$

$$0.6363748627922092 + 0.43429448190325176 \log(x^1 x^5 L^{2.2})^{0.2} +$$

$$751.5897375985036 \sqrt[1]{x^1 x^2 x^3 L^{0.5429999999999999}} +$$

$$0.29143753090741126 \sqrt[1]{x^1 x^2 x^3 L^{0.6516}} +$$

$$0.2203148213921238 \sqrt[1]{x^1 x^2 x^3 L^{0.724}} +$$

$$0.003750704563310625 \sqrt[1]{x^1 x^2 x^3 L^{1.003}} +$$

$$1.7240374574294893 \sqrt[1]{L^{-6}}$$

$$\sqrt[1]{1077.586206896552} +$$

$$1. \sqrt[1]{J - 8.3} + \sqrt[1]{\frac{x^1 L^{1.691}}{x^3}}$$

$$\sqrt[1]{x^1 x^2 x^3 L^{1.003}} + 3.48065383475226 \sqrt[1]{L^{-6}}$$

$$\sqrt[1]{J - 8.3} + \sqrt[1]{\frac{x^1 L^{1.691}}{x^3}}$$

$$\sqrt[1]{x^1 x^2 x^3 L^{1.003}} +$$

$$0.003966270997132027$$

$$\sqrt[1]{1.} + 0.49532 \sqrt[1]{C b L} \sqrt[1]{1.} + 0.000928 \sqrt[1]{J - 8.3} + \sqrt[1]{\frac{x^1 L^{1.691}}{x^3}}$$

$$\sqrt[1]{x^1 x^2 x^3 L^{1.003}} \sqrt[1]{L^{0.85}} +$$

$$30.47265682723607 \sqrt[1]{2.2604108721379874 \sqrt[1]{x^1 x^2 x^3 L^{0.1666666666666666}}} +$$

$$0.5373968269457794 \sqrt[1]{x^5} - \sqrt[1]{C m H 90.} - \sqrt[1]{h a l^{1.37565}}$$

$$\sqrt[1]{1.78933298360292 \sqrt[1]{10 c 7^{3.78613}}} \sqrt[1]{C b \bar{a} L} - 1.41434649220055$$

$$\& \sqrt[1]{\frac{A B T^{1.5}}{-h b + x^4 + A B T x^2 x^4}} - \sqrt[1]{\frac{5.081833302662383 \sqrt[1]{c 16}}{1}}$$

$$\sqrt[1]{\frac{24.358395841320416 \sqrt[1]{x^2}}{x^1}} + \sqrt[1]{\frac{0.07135249685269171 \sqrt[1]{x^1}}{x^4}}$$

$$0.2^{0.56} + 0.015253338360763261$$

$$x5 - \frac{1.78933298360292 \cdot 10^{3.78613} \cdot Cb \cdot \bar{a}}{Cm \cdot H90 - hal^{1.37565}} - 1.41434649220055$$

$$\& \frac{ABT^{1.5}}{-hb + x4 + ABT \cdot x2 \cdot x4} - \frac{5.081833302662383 \cdot c16}{x1^{0.9}}$$

$$\frac{24.358395841320416 \cdot x2}{x1 \cdot x1^{0.9}} + \frac{0.07135249685269171 \cdot x1}{x4 \cdot x1^{0.9}}$$

$$\frac{8.906116136247933 \cdot Cb \cdot x2 \cdot x4}{HCb \cdot x1 \cdot x2 \cdot x4^{0.666666666666667}} + 0. \bar{a} - \frac{43.953161110895605}{x1^{0.9}}$$

$$\text{CosB} \frac{-13.34248601399447 + 53.59231882287779 \cdot Cp}{x1} \cdot x1$$

$$\frac{x4^{1.07961}}{x2} \cdot H1 \cdot AT - 1.25 \cdot Cm \cdot x2 \cdot x4 + 135.730345312 \cdot AT \cdot c6 \cdot x5^2 +$$

$$135.730345312 - 0.00205 - 0.0010954451150103322 \cdot H - 0.04 + 1 \cdot c4L$$

$$Cb^4 \cdot \bar{a}^{-1.41434649220055} \cdot \frac{ABT^{1.5}}{-hb+x4+ABT \cdot x2 \cdot x4} \cdot \frac{0.006}{H100 + x1^{1.16}}$$

$$\frac{2.38 \cdot ABT}{Cb} + Cm \cdot x1 \cdot J0.453 + 0.4425 \cdot Cb - 0.2862 \cdot Cm +$$

$$0.3696 \cdot Cw - \frac{0.003467 \cdot x2}{x4} \cdot Hx2 + 2 \cdot x4 \cdot Ln \cdot x5^2 +$$

$$\frac{569.2916975592 \cdot ABT^{1.5} \cdot \bar{a}}{x1^{0.9}} \cdot \frac{0.566236530613344}{-1.5 \cdot hb \cdot x4} \cdot lx5 \cdot l - 2.45175 \cdot ABT -$$

$$9.807 \cdot hb + 9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{Csternl}^3$$

$$13.779184373405185 + 1 \cdot lx5 \cdot l - 2.45175 \cdot ABT - 9.807 \cdot hb +$$

$$9.807 \cdot x4 + 0.03969110399999999 \cdot x5^2 \cdot \text{Csternl}^2$$

$$\frac{10.179775898399999}{x1^{0.93}} + \frac{0.487118 \cdot H1 + 0.011 \cdot \text{Csternl}}{H1 - Cpl^{0.60247}}$$

$$\begin{aligned}
& \left(1 - C_p + \frac{0.121563^x}{x^2} \right)^{1.06806} \left(C_b x^2 x^4 \right)^{0.36486} \\
& \left(\frac{2.38 \text{ ABT}}{C_b} + \frac{0.46106}{x^4} \right) \cdot C_m x^1 J 0.453^x + 0.4425^x C_b - \\
& 0.2862^x C_m + 0.3696^x C_w - \frac{0.003467^x x^2}{x^4} H x^2 + 2^x x^4 L N x^5^{2^x} \\
& H 3.6363748627922092^x + 0.43429448190325176^x \text{Log} x^1 x^5 D L^{2^x} \wedge 0.6^x + \\
& 11.595927506702413^x H - 0.3572^x - 0.0187^x x^1 L x^5 H 90^x - h a l^{1.37565^x} \\
& 2.2366662295036503^x * \wedge 10 c 7^{3.78613^x} C_b \\
& \bar{a}^x - 1.41434649220055^x \& \left(\frac{A B T^{1.5^x}}{-h b + x^4 + A B T^x x^2 x^4} \right) + \\
& \left(\frac{5.081833302662383^x}{x^1} - c 16 - \frac{4.79323^x x^2}{x^1} \right) + \\
& \frac{0.0140407^x x^1}{x^4} - \frac{1.75254^x C_b x^2 x^4}{H C_b x^1 x^2 x^4 L^{0.6666666666666667^x}} \\
& 0^x \bar{a}^x \frac{-12.95316110505605^x}{x^1} \text{Cos} B \frac{-13.34248601399447^x + 53.59231882287779^x C_p}{x^1} \\
& x^1 x^2 J 1^x - \frac{0.8^x A T}{C_m x^2 x^4} x^4 J \frac{1.07961^x}{x^2} + 135.730345312^x A T c 6 x^5^{2^x} + \\
& 135.730345312^x - 0.00205^x - 0.0010954451150103322^x H - 0.04^x + 1^x c 4 L \\
& C_b^{4^x} \bar{a}^x - 1.41434649220055^x \left(\frac{A B T^{1.5^x}}{-h b + x^4 + A B T^x x^2 x^4} \right) \cdot \frac{0.006^x}{x^1} + \frac{0.006^x}{H 100^x + x^1 L^{0.16^x}} \\
& \left(\frac{2.38 \text{ ABT}}{C_b} + \frac{0.46106}{x^4} \right) \cdot C_m x^1 J 0.453^x + 0.4425^x C_b - 0.2862^x C_m + \\
& 0.3696^x C_w - \frac{0.003467^x x^2}{x^4} H x^2 + 2^x x^4 L N x^5^{2^x} +
\end{aligned}$$

$$569.2916975592 \text{ ABT}^{1.5} \bar{a} \left\{ \frac{1}{x^5} \left(1 - 2.45175 \cdot \text{ABT} \right) \right\}$$

$$9.807 \text{ hb} + 9.807 x^4 + 0.03969110399999999 x^5 \cdot \text{ABT}^3$$

$$13.779184373405185 + 1 \cdot \frac{1}{x^5} \left(1 - 2.45175 \cdot \text{ABT} \right) - 9.807 \text{ hb} + 9.807 x^4 + 0.03969110399999999 x^5 \cdot \text{ABT}^2$$

$$10.179775898399999 \left\{ 0.93 + \frac{1}{\text{H}1} - \text{Cpl}^{0.60247} \right\} + 0.487118 \text{ H}1 + 0.011 \text{ Csternl}$$

$$1 - \text{Cp} + \frac{0.121563}{-1.74 \cdot \text{Cp}}$$

$$\frac{1.06806}{x^2} \cdot \frac{1}{x^2} \cdot \frac{0.36486}{\text{Cb} x^2 x^4} + \frac{0.46106}{x^4} \cdot \frac{1}{x^1}$$

$$\frac{2.38 \text{ ABT}}{\text{Cb}} + \text{Cm} x^1 \cdot 0.453 + 0.4425 \text{ Cb} - 0.2862 \text{ Cm} + 0.3696$$

$$\text{Cw} - \frac{0.003467 x^2}{x^4} \cdot \text{Hx}2 + 2 \cdot x^4 \text{LN} x^5$$

$$\text{H}3.6363748627922092 + 0.43429448190325176 \text{ Log} x^1 x^5 \text{DL}^2$$

$$\text{H} - 104.1833333333332 + \text{H} - 0.5226568450555555 + 0.3500246608611111 \text{ Cbl} x^5 + x^1$$

$$\text{H} - 5.454166666666667 +$$

$$\text{H} - 0.0374 - 0.0001392138888888889 \text{ Ntd} x^2 +$$

$$\text{H}4.998 \cdot 10^{-6} - 0.00004616344444444444 \text{ Cbl} x^2 x^3 \text{L} x^5 \text{L}$$