KCC - ascent analysis

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Contents

1 Physics

$$a(t) = \frac{F(t)}{m(t)} \tag{1}$$

$$dm(t) = \begin{cases} 0, & \text{no fuel} \\ -c_m \end{cases} \tag{2}$$

$$F = -\hat{r}\frac{\kappa M}{|r|^3} + F_{aero} \tag{3}$$

$$F_{aero} = -\hat{v}\frac{1}{2}|v|^2 C A \rho \tag{4}$$