0.0.1 Moment of Inertia: Body: X-axis (Pitch) J_{ϕ_x}

The moment of inertia of the body with respect to pitch, is assumed to be sufficiently equivalent to the moment of inertia of "an ideal thin rectangular plate with length l_h, width $l_w = 0$, an axis of rotation at one end of the plate".

This relation is exhibited in Equation (0.1).

$$J_{\phi_x} = \frac{m_b \cdot l_{b.c2a}^2}{3} \tag{0.1}$$

0.0.2 Moment of Inertia: Body: Y-axis (Yaw) J_{ϕ_y}

The moment of inertia of the body with respect to pitch, is assumed to be sufficiently equivalent to the moment of inertia of "an ideal thin rectangular plate with length l_h, width $l_w = 0$, an axis of rotation at one end of the plate".

This relation is exhibited in Equation (0.2).

$$J_{\phi_y} = \frac{m_b \cdot (l_{bw}^2 + l_{bd}^2)}{12} \tag{0.2}$$