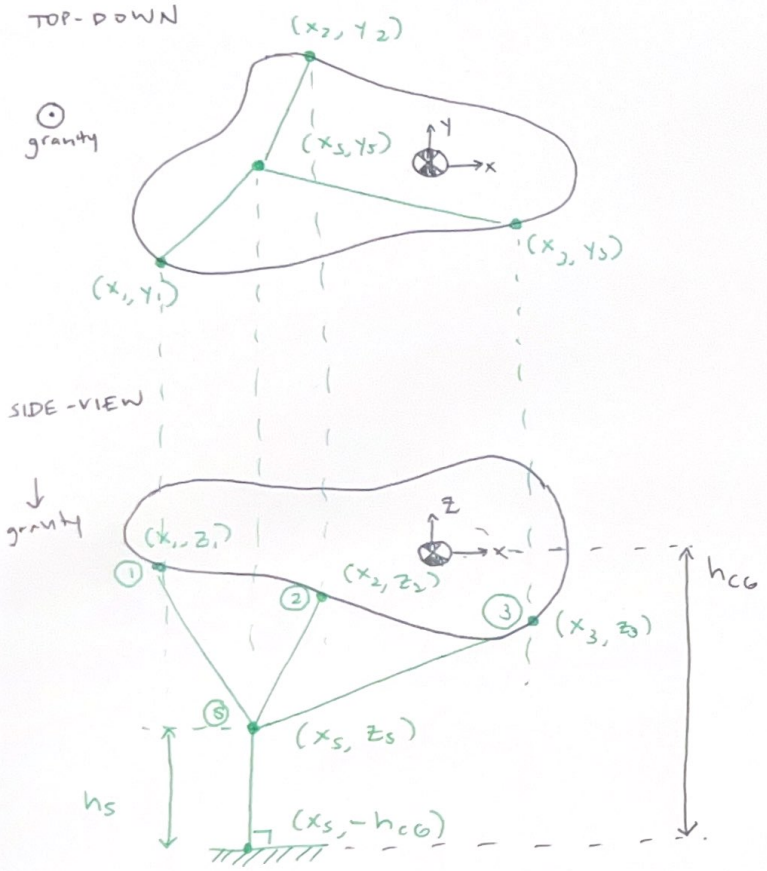
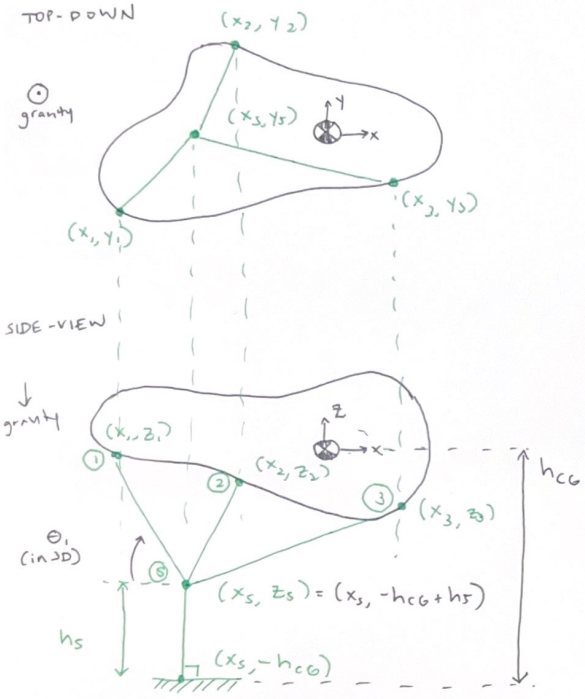


Design variables

x_s, y_s : in-plane (xy-plane) location of central support rod

h_s : height of central support rod



Design variables

x_s, y_s : in-plane (xy-plane) location of central support rod

h_s : height of central support rod

θ_i = angle from XY-plane to support rod i

l_i = length of ith support rod

$$l_i = \| x_i - x_s \|^2 = \left[(x_i - x_s)^2 + (y_i - y_s)^2 + (z_i - z_s)^2 \right]^{1/2}$$

$$l_i \sin\theta_i = z_i - (-h_{CG} + h_s)$$

$$\theta_i = \operatorname{asin}\left[\frac{z_i - (-h_{CG} + h_s)}{l_i} \right]$$