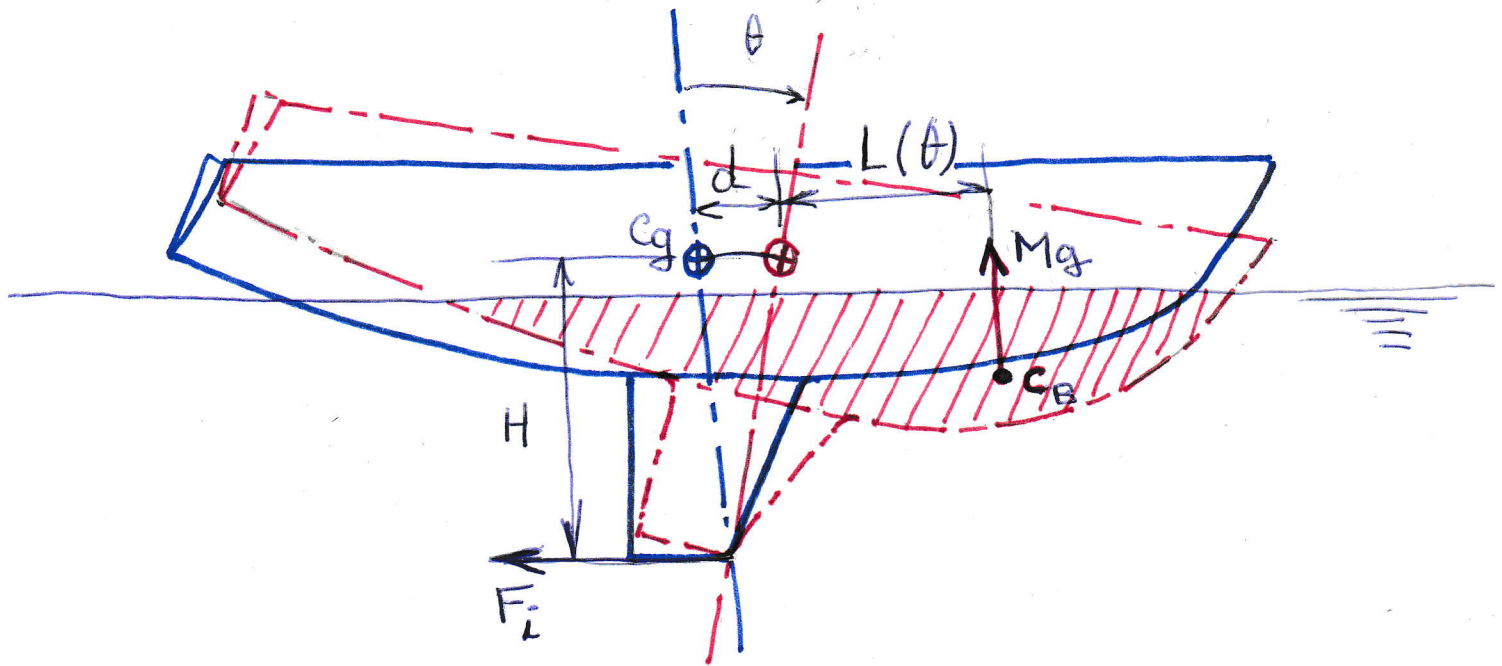


Impact force estimation from a rock grounding at speed V



- (1) $F_i = \gamma M g$ (Impact force when pivoting move stops, deceleration γ being the unknown)
- (2) $d = H \theta$ (geometry, θ assumed small)
- (3) $\gamma = \frac{V^2}{2d}$ (from Newton Law)
- (4) $L = f_{ct}(\theta)$ (from Hydrostatics)
- (5) $H F_i = L M g$ (Equilibrium at the end of the move)

Input data: Speed V , Hull volumes, M , H

Computation: θ initial

(1) $\rightarrow L$

(2) $\rightarrow d$

(3) $\rightarrow \gamma$

(4) $\rightarrow F_i$

(5) \rightarrow Equilibrium?

\rightarrow new θ :

iterations

\downarrow
up to equilibrium

$\Rightarrow \gamma \Rightarrow \textcircled{F_i}$