

Angular Momentum and Angular Impulse

Principle of Angular Impulse and Momentum

resultant moment: $M_R = \Sigma M = I$

since $\omega = d\theta / dt$: $M_R = I d\omega / dt$

multiply by dt : $M_R dt = I d\omega$

integrate both sides: $\int M_R dt = \int I d\omega = I\omega_f - I\omega_i$

Therefore:

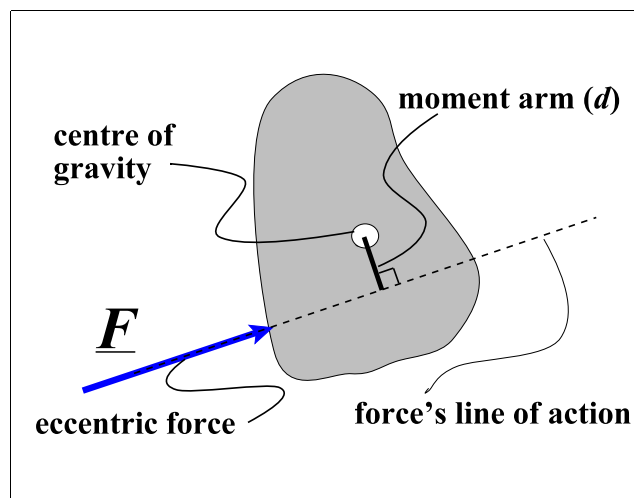
Angular impulse = change in angular momentum

Angular impulse of moment = $\int M_R dt \approx \Sigma M_R t$

Angular momentum = $I\omega$

Graphically, angular impulse is the area under a moment history.

Only eccentric resultant forces can cause angular momentum. An eccentric force's line of action does NOT pass through the object's centre of gravity.



Examples of Eccentric Forces

