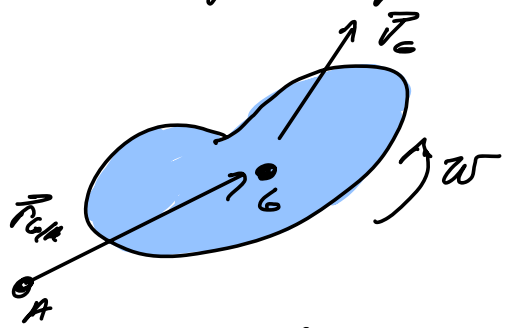
Theory Review: Impulse Momentum of a Rigid Body

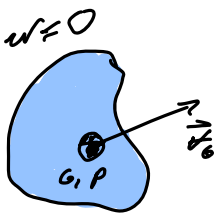
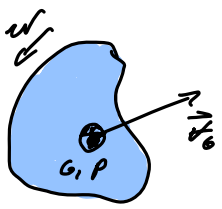
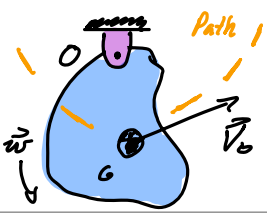
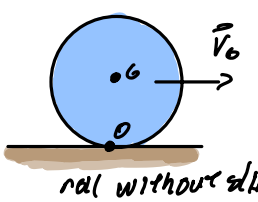
$$\vec{H}_{A1} + \int_1^2 \Sigma \vec{M}_A \, dt = \vec{H}_{A2}$$



In general $\vec{H}_A = \vec{H}_G + m\vec{r}_{G/A} \times \vec{v}_G$

$\vec{H}_G$ = angular momentum about center of mass

$\vec{v}_G$ = velocity of center of mass

Point A	Situation	Angular Momentum
A		Translation $\vec{H}_A = m\vec{r}_{G/A} \times \vec{v}_G$ $\vec{H}_G = \vec{0}$
A = G		$\vec{H}_A = \vec{H}_G = I_G\vec{\omega}$
A = O point not moving / zero velocity	 	$\vec{H}_A = \vec{H}_G = \vec{I}_O\vec{\omega}$ I_O is from // axis Theorem