ECO101 Economics

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direction using RHR later. Thus, $H_o = mrv\sin\phi$

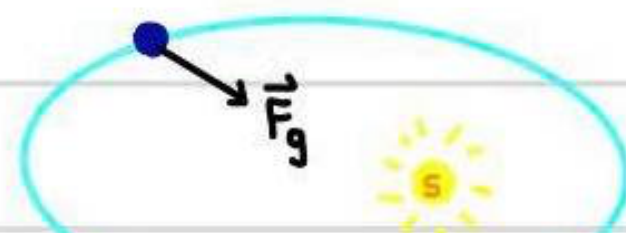· In a polar coordinate system, $H_o = mrv_\theta$

ANGULAR IMPULSE

$$\cdot \ \frac{d\vec{H_o}}{dt} = \frac{d}{dt}(\vec{r_o} \times m\vec{v}) = \frac{d\vec{r_o}}{dt} \times m\vec{v} + \vec{r_o} \times m\frac{d\vec{v}}{dt} = \vec{v} \times m\vec{v} + \vec{r_o} \times m\vec{a} = \vec{r_o} \times \vec{F} = \vec{M_o}\,!$$

$$\int_{\vec{H_{o1}}}^{\vec{H_{o2}}} d\vec{H_o} = \int_{t_1}^{t_2} \vec{M_o}\,dt \implies \Delta\vec{H_o} = \int_{t_1}^{t_2} \vec{M_o}\,dt$$

change in angular momentum = angular impulse

EXAMPLE: As a planet orbits a star...

Central Force acts radially inward → no moment.

$$\sum \vec{M_s} = \vec{r_c} \times \vec{L} = 0 \implies \vec{H_o} \text{ is conserved} \implies m_e r v_a$$

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#F7F4F8

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Search Bar
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