Lecture 0 Notes
PHY401: Classical Mechanics
Fall 2024

Contents

1 Review

1.1 Anngular Momentum

Theorem 9.3 *Let coordinate systems S1 , S2 , and S3 have a common origin. Let S1 rotate with angular velocity 1,2 with respect to S2 , and let S2 rotate with angular velocity 2,3 with respect to S3 . Then S1 rotates (instantaneously) with angular velocity*

$$\omega_{1,3} = \omega_{1,2} + \omega_{2,3}$$

with respect to S3.

Note 1. THIS IS A NOTE IN BOLD

Some Content

1.2 SubTopic 2

The Tidal Force

$$F_{tide} = -GM_m m\left(\frac{\hat{d}}{d^2} - \frac{\hat{d}_0}{d_0^2}\right) \tag{1}$$

Where:

$$G = \text{Gravitational Constant}$$
$$d = \text{Object's Position Relative to Moon}$$
$$d_0 = \text{Earth's Center Relative to the moon}$$
$$M_m = \text{Mass of the moon}$$