MAE 511 Dynamics Notes

August 18, 2019

1 Frames

Figure 1: A body with embedded point B and frame B.

Consider a body in space as seen in Figure 1. Assume an inertial Cartesian coordinate system in 3-Dimensions centered at point O composed of the unit vectors:

$$\bar{O} = \{O, \vec{i}_{\bar{O}}, \vec{j}_{\bar{O}}, \vec{k}_{\bar{O}}\} \tag{1}$$

Now, take a relative frame which is embedded in the body and centered at point A which is denoted as follows:

$$\bar{B} = \{B, \vec{i}_{\bar{B}}, \vec{j}_{\bar{B}}, \vec{k}_{\bar{B}}\} \tag{2}$$