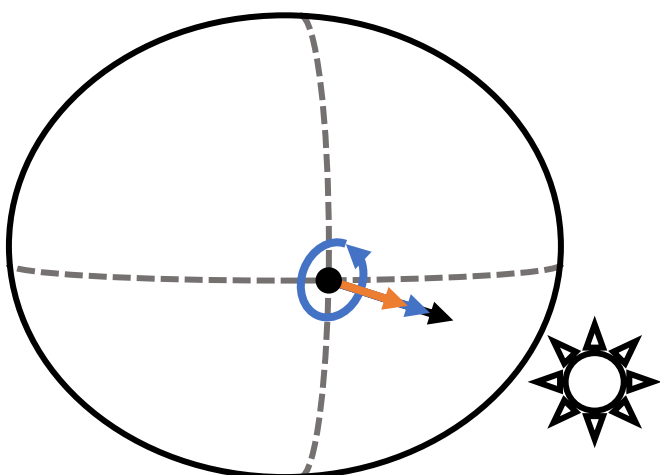


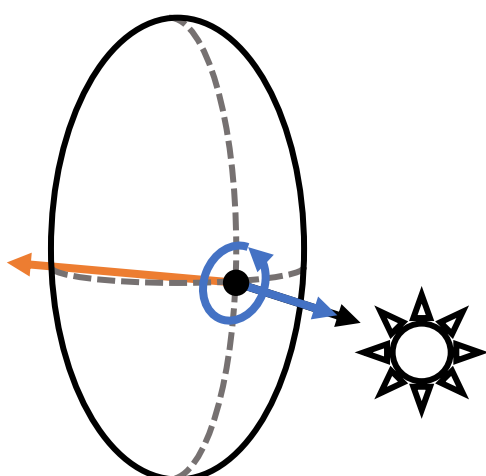
Class 1: Top-like

$$\hat{\mathbf{x}}, \hat{\boldsymbol{\Omega}} = \hat{\mathbf{x}}, \widehat{\mathbf{a}}_{\text{sym}} = \hat{\mathbf{x}}$$



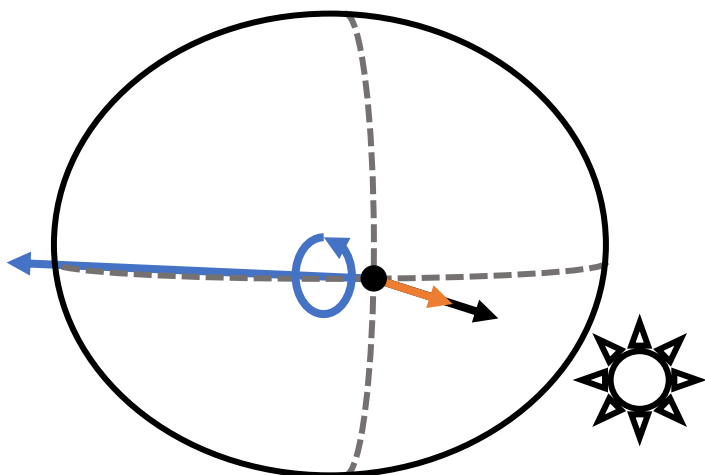
Class 2: Coin-like

$$\hat{\mathbf{x}}, \hat{\boldsymbol{\Omega}} = \hat{\mathbf{x}}, \widehat{\mathbf{a}}_{\text{sym}} = \hat{\mathbf{y}}$$



Class 3: Flipping

$$\hat{\mathbf{x}}, \hat{\boldsymbol{\Omega}} = \hat{\mathbf{y}}, \widehat{\mathbf{a}}_{\text{sym}} = \hat{\mathbf{x}}$$



Class 4: Rolling

$$\hat{\mathbf{x}}, \hat{\boldsymbol{\Omega}} = \hat{\mathbf{y}}, \widehat{\mathbf{a}}_{\text{sym}} = \hat{\mathbf{y}}$$

