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Chapter 6 Errata corrigenda

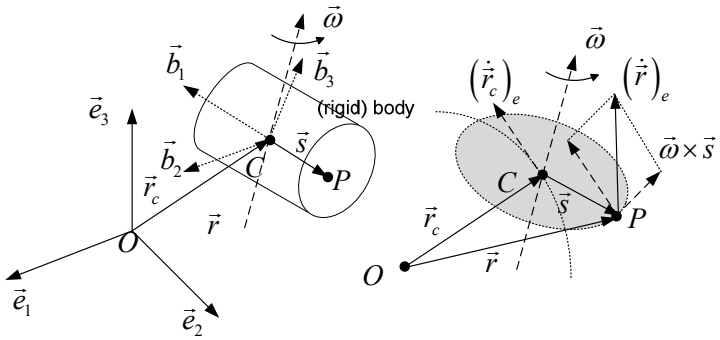
Erratum, page 239-240, Eqs. (6.8) and (6.9) (August 19, 2019)

Corrigendum

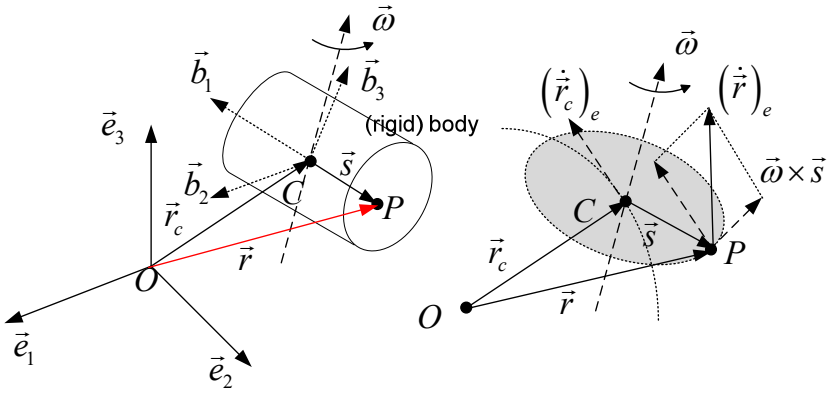
$$\dot{\boldsymbol{\theta}}(t)=\frac{\boldsymbol{\theta}}{\vartheta}\dot{\vartheta}+\frac{\vartheta}{2}\left(\cot(\vartheta/2)\boldsymbol{\omega}_b+\frac{\boldsymbol{\theta}}{\vartheta}\times\boldsymbol{\omega}_b\right)-\frac{\boldsymbol{\theta}}{2}\cot(\vartheta/2)\dot{\vartheta}, \tag{6.8}$$

$$\dot{\boldsymbol{\theta}}(t)=\left(I+\frac{1}{2}\boldsymbol{\theta}\times+\frac{1}{\vartheta^2}\left(1-\frac{\vartheta}{2}\cot(\vartheta/2)\right)(\boldsymbol{\theta}\times)^2\right)\boldsymbol{\omega}_b(t) \tag{6.2}$$

Erratum, page 243, Figure 6.1 (August 19, 2019)

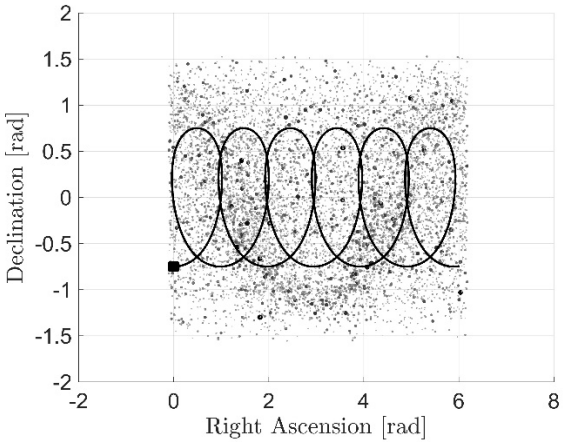


Corrigendum



Erratum Figure 6.5, right

Corrigendum



Erratum, Section 6.4.1, page 258

Let us apply to the frame of reference represented by $\mathfrak{q}(t)$, a small rotation $\{\Delta\phi(t), \vec{e}(t)\}$, where $\Delta\phi$ is the integrated angular rate $\omega(t)\Delta t$ during Δt:

$$\Delta\phi(t) = \int_t^{t+\Delta t} \nu(\tau) d\tau = \omega(t)\Delta t . \tag{6.69}$$

Corrigendum

Let us apply to the frame of reference represented by $\mathfrak{q}(t)$, a small rotation $\{\Delta\vartheta(t), \vec{e}(t)\}$, where $\Delta\vartheta$ is the integrated angular rate $\omega(t)\Delta t$ during Δt:

$$\Delta\vartheta(t) = \int_t^{t+\Delta t} \nu(\tau) d\tau = \omega(t)\Delta t . \tag{6.69}$$

Erratum, page 265 (August 19, 2019)

$$\begin{aligned} \tilde{\mathfrak{q}}_r &= \left(\mathfrak{q}_r^{-1} \otimes \hat{\mathfrak{q}}\right) \otimes \left(\hat{\mathfrak{q}}^{-1} \otimes \mathfrak{q}\right) = \mathfrak{e}_r \otimes \tilde{\mathfrak{q}} \cong \tilde{\mathfrak{q}} \\ \mathfrak{e} &= \left(\mathfrak{q}_r^{-1} \otimes \hat{\mathfrak{q}}\right) \otimes \left(\hat{\mathfrak{q}}^{-1} \otimes \breve{\mathfrak{q}}\right) = \mathfrak{e}_r \otimes \tilde{\mathfrak{q}}_m \cong \tilde{\mathfrak{q}}_m \end{aligned} \tag{6.97}$$

Corrigendum

$$\begin{aligned} \tilde{\mathfrak{q}}_r &= \left(\mathfrak{q}_r^{-1} \otimes \hat{\mathfrak{q}}\right) \otimes \left(\hat{\mathfrak{q}}^{-1} \otimes \mathfrak{q}\right) = \mathfrak{e}_r \otimes \tilde{\mathfrak{q}} \cong \tilde{\mathfrak{q}} \\ \mathfrak{e} &= \left(\mathfrak{q}_r^{-1} \otimes \hat{\mathfrak{q}}\right) \otimes \left(\hat{\mathfrak{q}}^{-1} \otimes \breve{\mathfrak{q}}\right) = \mathfrak{e}_r \otimes \mathfrak{e}_m \cong \mathfrak{e}_m \end{aligned} \tag{6.97}$$