PRINCIPLES OF GNSS, INERTIAL, AND MULTISENSOR INTEGRATED NAVIGATION SYSTEMS

SECOND EDITION

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Updates and Corrections

LAST UPDATED: 27 July 2014

This document provides:

- Updates for information in the book that has become out of date;
- Corrections of errors in the book;
- Important additional notes and references.

To report an update or correction or to suggest an additional note or reference, please email the author at p.groves (at) ucl.ac.uk.

Section(s)	Page(s)	Update/ correction/ addition
5.5.1	185	Equations (5.76) and (5.77) should be. (31 Aug 2013) $$\mathbf{C}_b^n(+) \approx \mathbf{C}_b^n(-)\mathbf{C}_{b+}^{b-} - \left(\mathbf{\Omega}_{ie}^n(-) + \mathbf{\Omega}_{en}^n(-)\right)\mathbf{C}_b^n(-)\tau_i . \qquad (5.76)$$ $$\mathbf{C}_b^n(+) = \left[\mathbf{I}_3 - \left(\mathbf{\Omega}_{ie}^n(-) + \tfrac{1}{2}\mathbf{\Omega}_{en}^n(-) + \tfrac{1}{2}\mathbf{\Omega}_{en}^n(+)\right)\tau_i\right]\mathbf{C}_b^n(-)\mathbf{C}_{b+}^{b-} . \qquad (5.77)$$
5.5.2	187	Equations (5.83) should be. (27 Jul 2014) $$\begin{aligned}\overline{\mathbf{C}}_b^i &= \frac{1}{\tau_i}\mathbf{C}_b^i(-)\int_t^{t+\tau_i}\sum_{r=0}^{\infty}\frac{\left\{(t'/\tau_i)\left[\boldsymbol{\alpha}_{ib}^b \wedge\right]\right\}^r}{r!}dt' \\ &= \mathbf{C}_b^i(-)\sum_{r=0}^{\infty}\frac{\left[\boldsymbol{\alpha}_{ib}^b \wedge\right]^r}{(r+1)!}\end{aligned} . \qquad (5.83)$$ (The lower limit of the integral has been corrected.)
5.5.1	197	Equations (5.99) should be. (27 Jul 2014) $$\mathbf{f}_{ib}^b = -\mathbf{C}_n^b\mathbf{g}_b^n(L_b, h_b) . \qquad (5.99)$$
5.7.3	213	Figure 5.27 is incorrectly labeled. North error and East error should be the other way round. (31 Aug 2013)
8.5.1	331	In Figure 8.21, 'Beida' should be 'Beidou'. (31 Aug 2013)
9.2.2	377	In Figure 9.14, both 'f's should be $\hat{f}$ and the 'à's should not be present. (31 Aug 2013)
9.2.3	383	Equation (9.56) should be (27 Jul 2014) $$K_{cf1} = 3.4B_{L\_CF}\tau_a, \quad K_{cf2} = 2.04\left(B_{L\_CF}\tau_a\right)^2 . \qquad (9.56)$$

<table>
<tr><th>Section(s)</th><th>Page(s)</th><th>Update/ correction/ addition</th></tr>
<tr><td>9.3.3</td><td>400</td><td>Equation (9.108) should be (31 Aug 2013)

$$\begin{aligned} \delta\rho_{a,lag}^{s,l} &= \frac{\left(\tilde{\dot{\rho}}_{a,R}^{s,l} - \dot{\rho}_{a,R}^{s}\right)\tau_a}{K_{co}} = \frac{\tilde{\dot{\rho}}_{a,R}^{s,l} - \dot{\rho}_{a,R}^{s}}{4B_{L\_CO}} \; . \\ x_{a,lag}^{s,l} &= \frac{f_{co}^{l}}{4B_{L\_CO}c}\left(\tilde{\dot{\rho}}_{a,R}^{s,l} - \dot{\rho}_{a,R}^{s}\right) \end{aligned} \qquad (9.108)$$
</td></tr>
<tr><td>9.3.3</td><td>400</td><td>Table 9.2 should be (27 Jul 2014)

<table>
<tr><th>PLL tracking loop bandwidth</th><th>PLL jerk tolerance</th><th>FLL tracking loop bandwidth</th><th>FLL jerk tolerance</th></tr>
<tr><td>5 Hz</td><td>10.3 m s^{-3}</td><td>1 Hz</td><td>16.9 m s^{-3}</td></tr>
<tr><td>10 Hz</td><td>82.3 m s^{-3}</td><td>2 Hz</td><td>67.7 m s^{-3}</td></tr>
<tr><td>15 Hz</td><td>278 m s^{-3}</td><td>5 Hz</td><td>423 m s^{-3}</td></tr>
<tr><td>20 Hz</td><td>658 m s^{-3}</td><td>10 Hz</td><td>1690 m s^{-3}</td></tr>
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